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TWENTY-FIRST ANNUAL REPORT

OF THE

42194

HEALTH DEPARTMENT

OF THE

CITY OF BOSTON,

For the Year 1892.

BOSTON:
ROCKWELL AND CHURCHILL, CITY PRINTERS.
1893.

ORGANIZATION OF THE HEALTH DEPARTMENT.

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EDWARD J. DONOVAN.

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Wm. G. Macdonald, M.D.	*Medical Inspector.*
Alexander Burr, M.D.V.	*Inspector at Abattoir.*

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HEALTH DEPARTMENT,
12 BEACON STREET, BOSTON, February 1, 1893.

HON. NATHAN MATTHEWS, JR.,
Mayor of the City of Boston:

SIR: The Board of Health respectfully submits its twenty-first annual report, covering the work of the Health Department for the past year, together with a statement of the receipts and expenditures of the department from February 1, 1892, to February 1, 1893.

The statistics of mortality, as will be seen in the tables accompanying this report, show an increase in the number of deaths over the number of the previous year. At the commencement of the year influenza was prevalent, and the deaths from this cause contributed largely to the increase of mortality, so that at the end of January the excess of deaths over those of the same period of the previous year was 296, and at the end of the first three months of the year the deaths were increased by 556, largely due to this cause. The total number of deaths for the year was 11,236. Estimating the population of the city at 469,647 in the middle of the year, the death-rate per one thousand inhabitants is found to be 23.92. This rate is .90 per thousand over the preceding year, and .50 per thousand over the average of the ten preceding years. The deaths from zymotic diseases show also an increase. This was especially the case in the mortality from diphtheria and scarlet fever, while the deaths from typhoid fever and measles show a decrease. The number of cases of diphtheria reported at this office during the year was 1,353, being 49 more cases than the average of the ten preceding years. The deaths from this cause were 414, being 25 in excess of the average number for the same period. The character of the disease appears to have been more severe than was the case in preceding years, as over 30 per cent. of the cases reported were fatal.

The number of cases of scarlet fever was 2,938, and the number of deaths 262, an unusually large proportionate mortality. The other principal causes of death were consumption, pneumonia, cholera infantum, heart disease, bronchitis, and violent deaths, which together give an aggregate of 5,065 deaths, or about 45 per cent. of the total mortality. The percentage of deaths of children under five years of age to the total mortality for the year was 33.24 as against 34.13 of the previous year. That, with a single exception of the year 1890, is the lowest percentage of infant mortality since the Board of Health was established, in 1872.

Comparative View of Twenty-five of the Principal Causes of Death during the Year 1892.

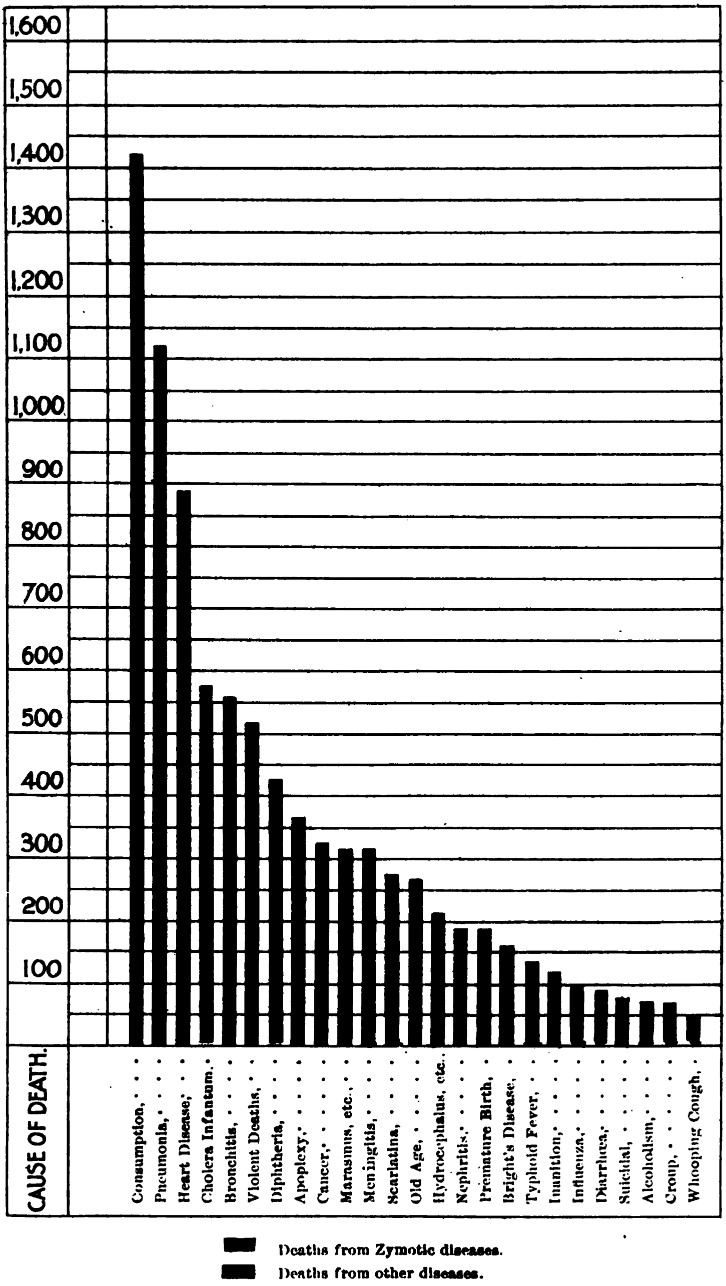
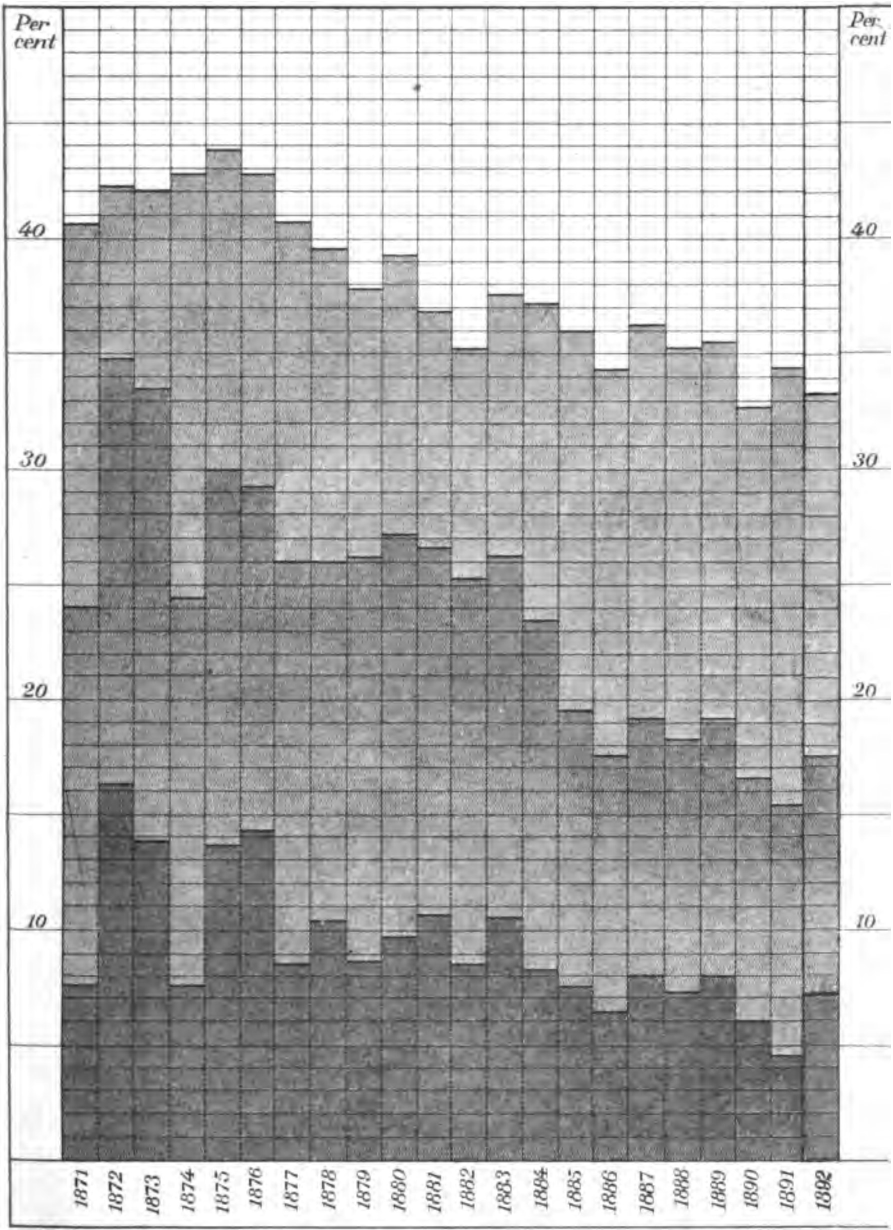


CHART No. I.

Percentage of deaths of Children under five years of age, ZYMOTIC DEATHS, AND FIVE OF THE PRINCIPAL INFECTIOUS DISEASES to the total mortality for twenty-two years ending 1892.



Percentage of Children under five years of age to total mortality ▒

" *of Zymotic deaths to total mortality*.. ▓

" *of Diphtheria, Scarlet Fever, Measles, Typhoid Fever and Small-Pox to total mortality*.. ■

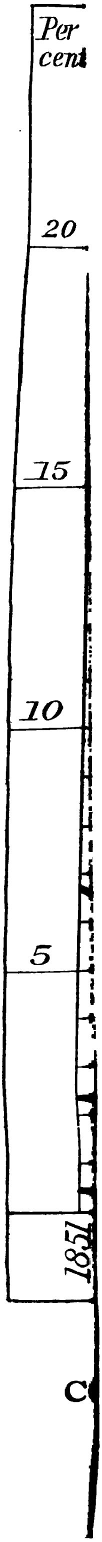

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Table I. — Total of Deaths, Still-births, and Deaths from Zymotic Diseases, for Twenty-two Years, with Percentages.

YEARS.	Total Deaths, exclusive of Still-births.	Still-births.	Total Zymotics.	Diphtheria and Croup.	Scarlet Fever.	Typhoid Fever.	Cerebro-spinal Meningitis.	Whooping-cough.	Measles.	Diarrhœal Diseases.	Small-pox.	Percentage of Zymotic Deaths to Total Mortality.	Rate of Still-births per 1,000 Inhabitants.
1871	5,888	543	1,408	128	111	176	3	30	9	756	23	23.91	1.85
1872	8,090	560	2,823	94	258	229	60	52	60	1,006	738	34.89	1.91
1873	7,869	515	2,626	119	474	243	216	33	16	925	302	33.37	1.76
1874	7,812	642	1,899	121	269	202	35	108	41	940	2	24.30	2.19
1875	9,060	541	2,722	631	534	227	41	41	65	989	1	30.02	1.28
1876	8,253	485	2,439	720	458	145	13	59	2	827	2	29.55	1.41
1877	7,316	471	1,830	471	104	156	24	88	2	913	4	25.83	1.37
1878	7,636	441	1,980	569	68	120	19	88	145	816	. .	25.91	1.28
1879	7,398	453	1,935	545	149	119	15	112	2	772	. .	26.15	1.24
1880	8,531	443	2,321	774	33	154	8	94	49	1,003	1	27.20	1.22
1881	9,016	513	2,423	802	35	207	16	77	108	870	6	26.87	1.29
1882	8,995	518	2,276	575	75	212	24	92	25	951	8	25.30	1.26
1883	9,740	504	2,551	608	211	198	23	31	152	1,023	1	26.19	1.17
1884	9,622	503	2,278	487	209	216	26	181	13	855	1	23.67	1.17
1885	9,618	520	1,879	450	156	152	19	26	84	723	2	19.53	1.30
1886	9,268	543	1,644	423	81	135	14	37	36	705	. .	17.73	1.35
1887	10,073	534	1,993	410	195	183	16	82	119	734	. .	19.7	1.33
1888	10,197	552	1,841	589	65	170	19	74	27	669	2	18.05	1.33
1889	10,259	598	1,968	683	23	186	21	96	48	710	2	19.18	1.42
1890	10,181	627	1,677	462	42	155	17	39	19	665	. .	16.47	1.39
1891	10,571	614	1,615	285	64	154	21	39	21	755	. .	15.27	1.33
1892	11,236	633	2,014	481	262	137	12	45	19	693	. .	17.92	1.34

Table II. — Total Number of Deaths under Five Years, and Five Years and over, for Twenty-two Years, with Percentages to the Total Mortality.

Years.	Total Deaths.	Five Years and over.	Under Five Years.	Percentages.	
				Five Years and over.	Under Five Years.
1871	5,888	3,493	2,395	59.33	40.67
1872	8,090	4,676	3,414	57.79	42.21
1873	7,869	4,580	3,289	58.20	41.80
1874	7,812	4,454	3,358	57.01	42.99
1875	9,060	5,088	3,972	56.16	43.84
1876	8,253	4,722	3,531	57.22	42.78
1877	7,316	4,334	2,982	59.24	40.76
1878	7,636	4,630	3,006	60.63	39.87
1879	7,398	4,593	2,805	62.08	37.92
1880	8,531	5,182	3,349	60.74	39.26
1881	9,016	5,702	3,314	63.24	36.76
1882	8,995	5,844	3,151	64.97	35.03
1883	9,740	6,113	3,627	62.76	37.24
1884	9,622	6,052	3,570	62.90	37.10
1885	9,618	6,152	3,466	63.97	36.03
1886	9,268	6,082	3,186	55.63	34.37
1887	10,073	6,411	3,662	63.65	36.35
1888	10,197	6,598	3,599	64.71	35.29
1889	10,259	6,626	3,633	64.59	35.41
1890	10,181	6,832	3,349	67.11	32.89
1891	10,571	6,963	3,608	65.87	34.13
1892	11,236	7,501	3,735	66.76	33.24

Table III. — Deaths during the Year 1892, by Sex, Condition, Color, Nativity, Parentage, and Season.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Total number of deaths	1190	813	995	938	895	749	1111	1014	833	803	895	1000	11,236
Sex:													
Males	567	433	495	462	469	389	566	487	412	396	470	489	5,635
Females	623	380	500	476	426	360	545	527	421	407	425	511	5,601
Condition:													
Married	386	286	291	287	263	211	238	215	227	241	273	313	3,231
Single	538	409	536	513	488	428	765	675	504	447	491	528	6,322
Widows	206	84	127	89	109	70	77	90	66	82	82	109	1,191
Widowers	54	29	38	36	27	28	24	25	31	28	42	33	395
Unknown	6	5	3	13	8	12	7	9	5	5	7	17	97
Color:													
Whites	1160	794	978	914	876	707	1090	988	811	785	873	975	10,951
Colored	30	19	17	24	19	42	21	26	22	18	22	25	285
Nativity:													
United States	689	508	655	593	563	495	828	724	557	518	589	606	7,325
Ireland	317	183	190	179	180	136	160	160	145	160	174	246	2,230
England	33	21	24	25	19	16	12	21	12	24	22	31	260
Scotland	18	4	8	5	12	8	5	6	6	9	8	8	97
Germany	22	12	21	17	11	16	14	9	14	7	19	11	173
British Provinces	67	54	58	62	66	41	48	47	55	43	47	56	644
Italy	7	3	8	8	11	5	3	5	3	9	11	2	75
Other countries	27	23	17	30	23	19	24	21	34	23	17	21	279
Unknown	10	5	14	19	10	13	17	21	7	10	8	19	153
Parentage:													
American	298	202	257	230	220	178	252	215	184	166	205	234	2,641
Irish	468	289	336	319	301	247	362	334	306	316	325	396	3,999
English	30	22	27	22	19	15	20	21	17	20	26	24	263
Scotch	23	8	12	8	14	12	18	12	11	12	11	10	151
German	26	26	36	25	26	23	31	22	25	26	28	21	315
British Provinces	57	35	62	49	60	41	71	51	52	40	40	54	612
Italian	16	19	22	19	24	20	17	19	11	17	23	15	222
Other countries	93	78	96	88	84	69	112	128	89	73	67	80	1,057
Mixed	78	61	68	72	73	63	128	108	74	63	88	88	964
Unknown	101	73	79	106	74	81	100	104	64	70	82	78	*1,012

* This includes deaths where one parent is unknown.

Table IV. — Deaths from Principal Zymotic Diseases.

	Total Deaths from each Cause.	Percentage of each Cause to Total Mortality.	Deaths per 1,000 inhabitants.	Total Deaths per Sex.		Total Deaths per Sex under Five Years.		Total Deaths under Five Years.	Percentage of each Cause under Five Years to Total Mortality.
				M.	F.	M.	F.		
Small-pox	...	....	...	...	...	...	...	...	....
Measles	19	.169	.040	12	7	11	5	16	.142
Scarlatina	262	2.331	.557	136	126	89	74	163	1.448
Diphtheria	414	3.684	.881	192	222	136	132	268	2.385
Croup	67	.596	.142	34	33	22	28	50	.444
Whooping-cough	45	.400	.095	15	30	14	30	44	.391
Typhoid fever	137	1.219	.291	78	59	2	...	2	.017
Erysipelas	37	.329	.078	22	15	9	6	15	.133
Puerperal fever	28	.249	.059	...	28	...	...	...	....
Carbuncle	4	.035	.008	2	2	...	1	1	.008
Dysentery	30	.266	.063	10	20	3	5	8	.071
Diarrhœa	77	.685	.163	36	41	25	22	47	.418
Cholera morbus	23	.204	.048	7	16	...	2	2	.017
Cholera infantum	563	5.010	1.198	279	284	279	284	563	5.010
Cerebro-spinal fever	12	.106	.025	7	5	3	2	5	.044
Influenza	97	.863	.206	40	57	4	5	9	.080
Intermittent fever	...	....	...	...	...	...	...	...	....
Rheumatism	43	.382	.091	16	27	2	3	5	.044
Pyæmia	9	.080	.019	5	4	...	2	2	.017
Syphilis, congenital	12	.106	.025	7	5	7	5	12	.106
Syphilis, tertiary	3	.026	.006	1	2	...	...	...	....
Purpura	3	.026	.006	2	1	2	1	3	.026
Alcoholism	72	.640	.153	53	19	...	...	...	....
Septicæmia	28	.249	.059	11	17	1	...	1	.008
Typhus fever	...	....	...	...	...	...	...	...	....
Tonsillitis	9	.080	.019	7	2	2	...	2	.017
Remittent fever	1	.008	.002	...	1	...	...	...	....

Table V.— Yearly Percentages of Principal Zymotic Deaths from 1879 to 1892, inclusive, to Total Mortality.

	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
Small-pox . .	. . .	.011	.066	.088	.010	.010	.020	. . .	. . .	.019	.019	. . .	. . .	. . .
Measles . . .	.027	.574	1.197	.277	1.560	.135	.873	.388	1.181	.264	.468	.186	.198	.169
Scarlatina . .	2.014	.386	.388	.838	2.166	2.172	1.621	.873	1.935	.637	.224	.412	.605	2.331
Diphtheria .	5.285	6.892	6.665	5.091	4.568	3.585	3.472	3.549	3.137	4.609	5.498	3.938	2.194	3.684
Croup	2.081	2.180	2.229	1.300	1.673	1.475	1.299	1.014	.933	1.167	1.160	599	.501	.596
Whooping-cough . . .	1.513	1.101	.854	1.022	.318	1.881	.270	.399	.814	.725	.936	.383	.368	.400
Typhoid fever	1.608	1.804	2.295	2.356	2.082	2.245	1.580	1.456	1.816	1.667	1.813	1.522	1.456	1.219
Erysipelas . .	.527	.281	.465	.444	.431	.448	.415	.420	.337	.402	.234	.353	.368	.329
Puerperal fever	.851	.726	.754	.833	.728	.467	.207	.183	.228	.176	.117	.265	.170	.249
Carbuncle . .	.027	.035	.055	.044	.020	.031	.072	.032	. . .	. . .	.019	.058	.018	.035
Dysentery .	1.365	1.488	1.064	.922	.903	.633	.644	.658	.585	.470	.741	.294	.454	.266
Diarrhœa . .	2.487	2.056	2.606	2.568	2.731	2.286	1.767	1.855	1.578	1.510	1.589	1.119	.851	.685
Cholera morbus	.351	.445	.177	.511	.246	.509	.319	.302	.258	.264	.214	.225	.189	.204
Cholera infantum . .	5.117	6.071	4.924	5.625	5.574	5.372	4.793	4.790	4.894	4.314	4.386	4.891	5.647	5.010
Cerebro-spinal fever .	.202	.105	.177	.266	.236	.270	.197	.151	.158	.186	.205	.166	.198	.106
Intermittent fever . . .	.013	.058	.083	.022	.010	.010	.031	. . .	. . .	.009	. . .	. . .	.018	. . .
Remittent fever	.081	.082	.044	.011	.010	. . .	.020	.053	. . .	.109	. . .	. . .	.009	.008
Rheumatism .	.378	.222	.454	.333	.215	.270	.405	.302	.436	.274	.302	.196	.217	.382
Pyæmia . . .	.175	.048	.155	.233	.154	.176	.114	.183	.138	.098	.078	.127	.141	.080
Syphilis, congenital . . .	.243	.128	.221	.133	.184	.280	.218	.215	.268	.254	.214	.392	.198	.106
Syphilis, tertiary	.094	.093	.088	.100	.133	.051	.503	.075	.079	.039	.097	.029	.047	.026
Purpura . . .	. . .	.058	.055	.011	.092	.011	.020	.075	.039	.039	.029	.058	.056	.026
Alcoholism .	.554	.644	.820	1.045	.687	.737	.571	.420	.585	.519	.604	.746	.614	.640
Septicæmia .	.175	.187	.122	.133	.277	.270	.322	.280	.228	.166	.175	.176	.274	.249
Yellow fever,	. . .	. . .	. . .	. . .	. . .	.010	.010	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Tonsillitis . .	.040	. . .	. . .	.033	.102	. . .	.051	.043	.049	.068	.009	.009	.028	.080

Table VI. — Aggregate and Average Age and Parentage of Decedents.

1892.	American Parentage.			Foreign Parentage.			Mixed Parentage.			One Parent Unknown.			Unknown.			Total of all Parentages.		
	Number of Deaths.	Aggregate Age.	Average Age.	Number of Deaths.	Aggregate Age.	Average Age.	Number of Deaths.	Aggregate Age.	Average Age.	Number of Deaths.	Aggregate Age.	Average Age.	Number of Deaths.	Aggregate Age.	Average Age.	Number of Deaths.	Aggregate Age.	Average Age.
January:																		
Males	125	3,978	31.82	350	12,602	36.00	31	384	12.38	17	820	48.23	44	2,342	53.22	567	20,126	35.49
Females . .	173	8,213	47.47	363	15,520	42.75	47	955	20.31	14	562	40.14	26	1,665	64.03	623	26,915	43.20
February:																		
Males	115	3,774	32.81	234	7,771	33.20	36	412	11.44	12	392	32.66	36	1,918	53.27	433	14,267	32.94
Females . .	87	3,251	37.26	243	8,454	34.79	25	371	14.84	7	270	38.57	18	1,046	58.11	380	13,392	35.24
March:																		
Males	121	4,067	33.61	289	8,487	29.36	39	324	8.30	12	528	44.00	34	1,225	36.02	495	14,631	29.55
Females . .	136	5,228	38.44	302	10,568	34.99	29	384	13.24	8	425	53.12	25	1,307	52.28	500	17,912	35.82
April:																		
Males	113	3,715	32.87	257	7,957	30.96	36	325	9.02	11	395	35.90	45	1,715	38.11	462	14,107	30.53
Females . .	117	3,995	34.14	273	9,208	33.72	36	497	13.80	16	449	28.06	34	1,231	36.20	476	15,380	32.31
May:																		
Males	113	3,078	27.23	270	8,341	30.89	36	448	12.44	16	581	36.31	34	1,311	38.55	469	13,759	29.33
Females . .	107	3,939	36.81	258	9,650	37.40	37	309	8.35	4	219	54.75	20	1,143	57.15	426	15,260	35.82
June:																		
Males	97	3,301	34.03	216	6,156	28.50	31	201	6.48	13	249	19.15	32	1,306	40.81	389	11,213	28.82
Females . .	81	3,390	41.85	211	6,992	33.13	32	295	9.21	9	300	33.33	27	1,264	46.81	360	12,241	34.00
July:																		
Males	118	2,819	23.88	322	7,882	24.47	64	365	5.70	24	390	16.25	38	1,213	31.92	566	12,669	22.38
Females . .	134	2,980	22.23	309	7,269	23.52	64	260	4.06	17	395	23.23	21	1,387	66.04	545	12,291	22.55
August:																		
Males	100	2,050	20.50	280	6,440	23.00	52	333	6.40	19	252	13.26	36	1,166	32.50	487	10,241	21.02
Females . .	115	3,275	28.47	307	8,282	26.97	56	316	5.64	18	516	28.66	31	1,185	38.22	527	13,574	25.75
September:																		
Males	86	2,804	32.50	253	6,325	25.00	40	312	7.80	15	487	32.46	18	637	35.38	412	10,565	25.64
Females . .	98	2,909	29.68	258	7,499	29.06	34	352	10.35	11	231	21.00	20	830	41.50	421	11,821	28.07

October:																			
Males	84	2,974	35.40	250	7,101	28.40	31	318	10.25	8	177	22.12	23	1,099	47.78	396	11,669	29.46
Females . .	82	2,942	35.87	254	7,617	29.98	32	518	16.18	14	470	33.57	25	1,555	62.20	407	13,102	32.19
November:																			
Males	110	3,663	33.30	274	8,874	32.38	38	521	13.71	14	449	32.07	34	1,500	44.11	470	15,007	31.92
Females . .	95	2,883	30.34	246	8,278	33.65	50	594	11.88	9	391	43.44	25	1,415	56.60	425	13,561	31.90
December:																			
Males	114	3,446	30.22	285	9,318	32.69	49	180	3.67	5	151	30.20	36	1,903	52.86	489	14,998	30.67
Females . .	120	4,110	34.25	315	11,615	36.87	39	289	7.41	8	315	39.37	29	1,454	50.13	511	17,783	34.80
Total { Males	1,296	39,669	30.60	3,280	97,254	29.65	483	4,123	8.53	166	4,871	29.34	410	17,335	42.28	5,635	163,252	28.97
Total { Females	1,345	47,115	35.02	3,339	110,952	33.22	481	5,140	10.68	135	4,543	33.65	301	15,482	51.43	5,601	183,232	32.71
Total of both sexes	2,641	86,784	32.86	6,619	208,206	31.45	964	9,263	9.60	301	9,414	31.27	711	32,817	46.15	11,236	346,484	30.83

Table VII. — Difference in Years between the Average Age of Decedents of Mixed, Foreign, and American Parentage.

MONTHS.	1892.					
	Average Age.			Average Age.		
	American.	Foreign.	Difference.	American.	Mixed.	Difference.
January:						
Males	31.82	36.00	4.18	31.82	12.38	19.44
Females	47.47	42.75	4.72	47.47	20.31	27.16
February:						
Males	32.81	33.20	.39	32.81	11.44	23.37
Females	37.26	34.79	2.47	37.26	14.84	22.42
March:						
Males	33.61	29.36	4.25	33.61	8.30	25.31
Females	38.44	34.99	3.45	38.44	13.24	25.20
April:						
Males	32.87	30.96	1.91	32.87	9.02	23.85
Females	34.14	33.72	.42	34.14	13.80	20.34
May:						
Males	27.23	30.89	3.66	27.23	12.44	14.79
Females	36.81	37.40	.59	36.81	8.35	28.46
June:						
Males	34.03	28.50	5.53	34.03	6.48	27.55
Females	41.85	33.13	8.72	41.85	9.21	32.64
July:						
Males	23.88	24.47	.59	23.88	5.70	18.18
Females	22.23	23.52	.29	22.23	4.06	18.17
August:						
Males	20.50	23.00	2.50	20.50	6.40	14.10
Females	28.47	26.97	1.50	28.47	5.64	22.83
September:						
Males	32.50	25.00	7.50	32.50	7.80	24.70
Females	29.68	29.06	.62	29.68	10.35	19.33
October:						
Males	35.40	28.40	7.00	35.40	10.25	25.15
Females	35.87	29.98	5.89	35.87	16.18	19.66
November:						
Males	33.40	32.38	1.02	33.40	13.71	19.69
Females	30.34	33.65	3.31	30.34	11.88	18.46
December:						
Males	30.22	32.69	2.47	30.22	3.67	26.55
Females	34.25	36.87	2.62	34.25	7.41	26.84
Total of both sexes,	32.86	31.45	1.41	32.86	9.60	23.26

Table VIII. — Average Age at Death, with American and Foreign Parentage.

YEARS.	American Parentage. (Average Age.)	Foreign Parentage. (Average Age.)	Total Average. (All Parentages.)
1880	32.10	27.82	27.60
1881	30.96	27.82	27.29
1882	31.19	30.34	28.78
1883	30.73	29.22	27.79
1884	30.65	30.12	28.55
1885	32.54	30.79	29.49
1886	33.84	31.49	30.35
1887	31.84	30.63	29.26
1888	32.66	31.01	29.89
1889	31.56	31.01	29.48
1890	33.75	32.32	31.10
1891	34.47	32.51	31.42
1892	32.86	31.45	30.83

Table IX. — Ten of the Principal Causes of Death, by Sex and Month, with Nativity of Parents.

	Jan.		Feb.		Mar.		Apr.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.		Nativity of Parents.										
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	United States.	Ireland.	England.	Scotland.	Germany.	British Prov.	Italy.	Other Countries.	Mixed.	Unknown.	Total.
Consumption	69	81	41	52	55	59	74	61	54	75	43	47	58	79	51	55	54	55	51	59	58	67	55	61	663	751	206	699	27	20	35	105	17	142	74	89	1,414
Pneumonia	120	120	74	46	63	56	53	49	58	47	38	20	18	18	15	9	24	22	21	24	43	40	73	71	600	522	237	473	23	20	23	54	24	80	87	101	1,122
Heart disease	33	51	42	33	49	63	45	45	40	46	31	31	29	23	20	37	18	31	25	30	52	39	43	34	427	463	229	345	39	9	34	36	7	51	34	106	890
Cholera infantum . . .	1	.	.	1	.	.	1	1	.	1	8	8	128	141	103	93	26	31	10	7	2	1	.	.	279	284	129	122	11	7	15	46	14	99	88	32	563
Bronchitis	44	65	35	31	23	32	20	31	24	13	19	17	6	13	4	11	7	9	21	27	28	26	21	30	252	305	113	226	6	9	12	23	26	62	50	30	557
Violent deaths	23	11	29	9	29	6	30	12	46	9	37	13	34	4	34	9	33	10	36	10	33	13	31	18	395	124	105	165	22	6	14	32	9	47	25	94	519
Diphtheria	15	13	15	16	18	17	23	29	18	21	13	10	7	12	10	13	15	16	15	20	19	27	24	28	192	222	84	110	7	6	14	41	5	64	68	15	414
Apoplexy	16	18	21	9	15	22	8	8	13	13	10	20	12	15	12	13	16	11	14	15	19	18	23	17	179	179	111	138	11	3	12	7	2	19	9	46	358
Cancer	7	12	7	10	6	14	8	25	7	18	10	23	4	18	6	20	9	24	17	25	9	18	9	22	99	229	93	112	18	9	10	11	1	23	6	45	328
Marasmus, etc.	9	15	6	7	12	12	16	11	17	9	7	6	16	19	22	29	24	26	12	19	8	13	9	3	158	169	92	58	7	.	8	22	6	43	48	43	327

Table X.—Ten of the Principal Causes of Death, arranged by Age and Sex.

	Under 1 yr.		1 yr. and under 2 yrs.		2 yrs. and under 3 yrs.		3 yrs. and under 4 yrs.		4 yrs. and under 5 yrs.		Total under 5 yrs.		5 yrs. and under 10 yrs.		10 yrs. and under 20 yrs.		20 yrs. and under 30 yrs.		30 yrs. and under 40 yrs.		40 yrs. and under 50 yrs.		50 yrs. and under 60 yrs.		60 yrs. and under 70 yrs.		70 yrs. and under 80 yrs.		80 yrs. and under 90 yrs.		90 yrs. and under 100 yrs		Over 100 years.		Total of all ages.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Consumption	7	17	9	8	3	1	.	2	2	4	21	32	5	8	42	110	232	249	157	156	109	107	51	45	34	30	10	12	2	2	.	.	.	.	663	751
Pneumonia	97	65	41	45	20	10	7	13	10	7	175	140	18	12	11	9	61	46	85	42	64	58	64	53	61	71	48	55	13	24	.	2	.	.	600	522
Heart disease	12	7	1	.	2	2	1	2	2	2	18	13	12	14	18	38	41	38	43	31	64	63	65	63	92	90	59	85	15	28	.	.	.	.	427	463
Cholera infantum	244	243	31	39	3	1	1	.	.	1	279	284	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	279	284
Bronchitis	104	82	34	33	8	9	7	3	1	1	154	128	4	3	.	4	12	10	9	5	13	14	17	25	23	43	12	45	8	26	.	2	.	.	252	305
Violent deaths	12	8	5	5	6	3	8	2	8	2	39	20	21	5	34	7	58	22	91	13	63	14	51	15	24	10	11	8	3	8	.	2	.	.	395	124
Diphtheria	9	12	38	38	40	30	32	36	17	16	136	132	46	70	6	10	3	6	.	2	.	1	.	.	.	.	1	1	.	.	.	.	.	.	192	222
Apoplexy	2	.	1	.	.	2	1	.	.	1	4	3	.	1	1	.	5	9	10	6	24	20	34	40	42	33	42	42	15	22	2	3	.	.	179	179
Cancer	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	5	5	32	21	49	30	48	22	59	15	27	5	8	.	.	.	.	99	229
Marasmus, etc.	128	138	8	9	2	1	3	2	1	.	142	150	3	1	2	2	1	.	1	3	2	.	.	3	3	2	1	1	2	6	1	1	.	.	158	169

Table XI.—Deaths from Principal Zymotic Diseases, by Sex and Month, with Nativity of Parents.

	Jan.		Feb.		Mar.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.		Nativity of Parents.										
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	U. S.	Ireland.	England.	Scotland.	Germany.	British Provinces.	Italy.	Other Countries.	Mixed.	Unknown.	Total.
Small-pox	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Measles	1	.	.	.	2	.	.	1	.	.	2	2	.	1	1	1	.	.	1	.	2	2	3	.	12	7	4	4	1	.	.	3	2	3	2	.	19
Scarlatina	13	16	11	9	14	14	14	11	17	17	9	9	5	5	8	6	6	3	13	11	14	12	12	13	136	126	71	58	2	4	7	16	8	39	46	11	262
Diphtheria	15	13	15	16	18	17	23	29	18	21	13	10	7	12	10	13	15	16	15	20	19	27	24	28	192	222	84	110	7	6	14	41	5	64	68	15	414
Croup	5	2	2	4	3	2	2	3	2	3	1	2	1	1	1	.	1	2	3	3	4	8	9	3	34	33	23	16	1	.	2	2	3	11	9	.	67
Whooping-cough	3	6	2	6	4	2	.	3	2	1	.	3	.	1	.	2	3	3	.	.	.	2	1	1	15	30	17	16	.	.	.	1	.	4	5	2	45
Typhoid fever	1	1	2	3	3	4	2	5	6	3	3	3	5	1	9	6	11	7	17	12	11	7	8	7	78	59	43	45	5	1	7	7	4	11	4	10	137
Erysipelas	1	1	2	1	5	2	.	3	3	.	3	3	3	1	.	1	.	.	1	1	1	.	3	2	22	15	9	5	.	.	1	5	3	5	6	3	37
Puerperal fever	.	1	.	3	.	4	.	6	.	.	.	4	.	1	.	3	.	1	.	.	.	1	.	4	.	28	4	12	1	1	1	2	2	5	.	.	28
Carbuncle	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	1	.	.	1	.	.	.	2	2	2	.	1	.	.	.	.	.	.	1	4
Dysentery	.	.	1	.	.	1	.	1	.	1	.	1	3	3	2	5	.	5	.	1	3	1	1	1	10	20	8	13	1	.	1	.	.	3	1	3	30
Diarrhœa	.	2	.	.	3	3	.	1	.	.	.	2	12	6	7	12	9	11	2	.	2	2	1	2	36	41	15	27	3	.	2	1	1	9	10	9	77
Cholera morbus	.	.	.	.	.	.	1	.	.	.	.	1	3	7	3	5	.	2	.	.	.	1	.	.	7	16	5	11	1	.	1	.	.	1	2	2	23
Cholera infantum	1	.	.	1	.	.	1	1	.	1	8	8	128	141	103	93	26	31	10	7	2	1	.	.	279	284	129	122	11	7	15	46	14	99	88	32	563
Cerebro-spinal fever	1	1	2	1	.	.	.	1	2	1	1	.	.	.	.	1	.	.	.	.	.	.	1	.	7	5	2	4	.	.	.	2	.	2	2	.	12

Yellow fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
Rheumatism	1	2	2	2	1	4	2	2	.	4	6	.	2	7	.	3	1	1	.	1	.	1	1	.	16	27	15	15	.	1	1	.	.	4	3	4	43
Pyæmia	.	.	.	.	.	1	.	.	.	.	1	.	1	1	.	.	2	1	.	.	1	.	.	1	5	4	3	2	.	.	.	.	3	.	.	1	9
Syphilis, congenital	.	.	.	.	2	.	3	2	.	.	.	.	.	1	.	.	.	.	1	.	1	2	.	.	7	5	2	2	.	.	.	.	1	1	.	6	12
Syphilis, tertiary	.	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.		.	.	.	1	.	.	.	1	2	.	1	.	.	1	.	1	.	.	.	3
Purpura	.	.	1	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	2	1	2	1	.	.	.	.	.	.	.	.	3
Alcoholism	6	1	3	1	7	2	4	3	3	1	3	1	6	2	8	3	1	.	5	.	4	1	3	4	53	19	15	37	1	1	.	3	.	3	1	11	72
Septicæmia	1	.	1	2	1	3	.	.	2	2	1	.	1	.	1	3	1	.	1	2	.	.	1	5	11	17	6	10	3	.	2	1	1	3	.	2	28
Remittent fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	1
Tonsilitis	1	.	.	.	1	.	.	.	1	.	2	.	.	.	.	.	.	.	.	2	2	.	.	.	7	2	2	5	.	.	1	1	.	.	.	.	9
Typhus fever	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Influenza	28	35	6	10	3	4	2	1	1	1	.	2	.	.	.	.	.	.	.	1	.	2	.	1	40	57	32	39	3	.	1	4	.	5	7	6	97
Intermittent fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Table XII. — Deaths from Principal Zymotic Diseases, arranged by Age and Sex.

	Under 1 yr.		1 yr. and under 2 yrs.		2 yrs. and under 3 yrs.		3 yrs. and under 4 yrs.		4 yrs. and under 5 yrs.		Total under 5 yrs.		5 yrs. and under 10 yrs.		10 yrs. and under 20 yrs.		20 yrs. and under 30 yrs.		30 yrs. and under 40 yrs.		40 yrs. and under 50 yrs.		50 yrs. and under 60 yrs.		60 yrs. and under 70 yrs.		70 yrs. and under 80 yrs.		80 yrs. and under 90 yrs.		90 yrs. and under 100 yrs		Total of all ages.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Small-pox	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Measles	3	2	4	3	3	.	1	.	.	.	11	5	1	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	12	7
Scarlatina	13	8	20	19	13	15	30	18	13	14	89	74	35	43	10	6	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	136	126
Diphtheria	9	12	38	38	40	30	32	36	17	16	136	132	46	70	6	10	3	6	.	2	.	1	.	.	.	.	1	1	.	.	.	.	192	222
Croup	3	3	8	10	4	8	5	7	2	.	22	28	12	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	34	33
Whooping-cough	7	22	4	5	3	.	.	2	.	1	14	30	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	15	30
Typhoid fever	.	.	.	.	1	.	1	.	.	.	2	.	1	1	10	15	41	26	13	9	6	4	3	1	2	2	.	.	.	1	.	.	78	59
Erysipelas	8	5	1	.	.	.	.	1	.	.	9	6	.	.	.	.	1	.	4	1	1	5	3	2	4	.	.	1	.	.	.	.	22	15
Puerperal fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	15	.	12	.	.	.	.	.	.	.	.	.	.	.	.	.	28
Carbuncle	.	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	.	2	2
Dysentery	1	4	1	1	.	.	1	.	.	.	3	5	.	1	.	.	1	1	.	2	1	.	1	2	1	4	1	3	2	2	.	.	10	20
Diarrhœa	22	20	2	.	1	.	.	1	.	1	25	22	.	1	1	1	1	.	.	2	2	.	.	2	2	4	4	5	1	4	.	.	36	41
Cholera morbus	.	.	.	1	.	.	.	.	.	1	.	2	.	3	1	.	1	.	1	.	1	2	2	1	.	3	1	4	.	1	.	.	7	16
Cholera infantum	244	243	31	39	3	1	1	.	.	1	279	284	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	279	284
Cerebro-spinal fever	1	.	.	.	1	.	1	1	.	1	3	2	1	1	2	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	5
Remittent fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1

Rheumatism	1	.	1	1	.	.	.	.	.	2	2	3	.	4	.	3	.	1	.	2	2	3	4	3	7	8	1	2	.	3	.	.	16	27
Pyæmia	.	2	.	.		.	.	.	.	.	.	2	.	.	1	.		1	2	.	.	1	1	.	1	.	.	.	.	.	.	.	5	4
Syphilis, congenital	7	5	.	.	.	.	.	.	.	.	7	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	5
Syphilis, tertiary	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	2
Purpura	2	1	.	.	.	.	.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1
Alcoholism	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	3	15	9	11	3	10	4	5	.	1	.	.	.	.	.	53	19
Septicæmia	.	.	.	.	.	.	.	.	1	.	1	.	.	.	2	.	.	4	1	2	1	7	1	3	3	1	1	.	1	.	.	.	11	17
Tonsilitis	1	.	.	.	.	.	.	.	1	.	2	.	1	1	.	.	1	.	2	1	1	.	.	.	.	.	.	.	.	.	.	.	7	2
Typhus fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Influenza	2	4	1	1	1	.	.	.	.	.	4	5	.	.	2	.	1	3	1	3	1	7	7	4	7	13	10	13	7	8	.	1	40	57
Intermittent fever	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Table XIII. — The Number and Percentages of Deaths in each Quarter of each Year during a Period of Twenty-eight Years, 1865-92 inclusive.

Years.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Rate per 1,000 Inhabitants.
	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	Deaths.	Per cent.	
1865	1,115	24.55	1,068	23.52	1,353	29.80	1,005	22.13	23.6
1866	999	22.81	957	21.85	1,338	30.56	1,085	24.78	22.4
1867	1,071	24.22	950	21.49	1,191	26.94	1,209	27.35	22.3
1868	1,341	24.30	1,203	21.80	1,736	31.45	1,239	22.45	23.9
1869	1,374	24.88	1,297	23.48	1,562	28.28	1,290	23.36	28.4
1870	1,395	22.88	1,314	21.55	1,983	32.52	1,406	23.05	24.3
1871	1,411	23.97	1,299	22.06	1,842	31.28	1,336	22.69	28.
1872	1,697	20.97	1,777	21.97	2,511	31.04	2,105	26.02	31 80
1873	2,115	26.88	1,726	21.93	2,278	28.95	1,750	22.24	30.27
1874	1,805	23.11	1,818	23.27	2,278	29.16	1,911	24.46	24.0
1875	2,190	24.17	2,011	22.20	2,680	29.58	2,179	24.05	24.95
1876	2,246	27.21	1,800	21.92	2,375	28.78	1,823	22.09	23.30
1877	1,723	23.55	1,613	22.05	2,317	31.67	1,663	22.73	20.15
1878	1,743	22.82	1,744	22.84	2,174	28.47	1,975	25.87	21.03
1879	1,947	26.32	1,615	21.88	1,959	26.48	1,877	25.37	20.38

1880	2,015	23.62	1,829	21.45	2,500	29.30	2,187	25.63	23.53
1881	2,332	25.86	2,021	22.41	2,466	27.34	2,197	24.38	22.67
1882	2,104	23.39	2,212	24.59	2,489	27.67	2,190	24.35	21.91
1883	2,268	23.28	2,409	24.74	2,757	28.31	2,306	23.67	22.76
1884	2,284	23.73	2,103	21.85	2,725	28.33	2,510	26.09	22.48
1885	2,510	26.10	2,484	25.82	2,592	26.95	2,032	21.13	24.04
1886	2,214	23.89	2,113	22.79	2,580	27.84	2,361	25.48	23.17
1887	2,362	23.45	2,281	22.65	2,912	28.90	2,518	25.00	25.18
1888	2,790	27.36	2,420	23.73	2,649	25.98	2,338	22.93	24.57
1889	2,437	23.75	2,543	24.79	2,854	27.82	2,425	23.64	24.42
1890	2,911	28.60	2,244	22.04	2,699	26.51	2,327	22.85	22.70
1891	2,442	23.10	2,540	24.03	2,835	26.82	2,754	26.05	23.02
1892	2,998	26.68	2,582	22.98	2,958	26.33	2,698	24.01	23.92

Table XIV. — Deaths from Ten of the Principal Causes.

	Total Deaths from each Cause.	Percentage of each Cause to Total Mortality.	Deaths per 1,000 inhabitants.	Total Deaths by Sex.		Total Deaths by Sex under Five Years.		Total deaths under Five Years.	Percentage of each Cause under Five Years to Total Mortality.
				M.	F.	M.	F.		
Consumption	1,414	12.584	3.017	663	751	21	32	53	.471
Pneumonia	1,122	9.985	2.389	600	522	175	140	315	2.803
Heart disease	890	7.920	1.895	427	463	18	13	31	.275
Cholera infantum	563	5.010	1.198	279	284	279	284	563	5.010
Bronchitis	557	4.957	1.185	252	305	154	128	282	2.509
Violent deaths	519	4.619	1.105	395	124	39	20	59	.525
Diphtheria	414	3.684	.881	192	222	136	132	268	2.385
Apoplexy	358	3.186	.762	179	179	4	3	7	.062
Cancer	328	2.919	.698	99	229				
Marasmus, etc.	327	2.910	.696	158	169	142	150	292	2.598

Table XV. — Total Deaths each Quarter of the last Five Years, with the Aggregate and Average Number from 1882 to 1887, inclusive.

	1888.	1889.	1890.	1891.	1892.	5 years, 1883-1887.	
						Aggregate.	Average.
First quarter	2,790	2,437	2,911	2,442	2,998	11,638	2,328
Second quarter . . .	2,420	2,543	2,244	2,540	2,582	11,390	2,278
Third quarter	2,649	2,854	2,699	2,835	2,958	13,566	2,713
Fourth quarter . . .	2,338	2,425	2,327	2,754	2,698	11,727	2,345
Total for each year,	10,197	10,259	10,181	10,571	11,236	48,321	9,664

Table XVI. — Total Deaths and Percentages each Quarter for the Year 1892, with Aggregates and Percentages for the Ten Years previous.

	1892.		1882-1891.	
	Deaths.	Per cent.	Deaths.	Per cent.
First quarter	2,998	26.68	24,322	24.69
Second quarter	2,582	22.98	23,349	23.70
Third quarter	2,958	26.33	27,092	27.50
Fourth quarter	2,698	24.01	23,761	24.11
Total	11,236	100.00	98,524	100.00

Table XVII. — Parentage of Children under One, Two, and Five Years for each Month during Year 1892.

	JANUARY.			FEBRUARY.			MARCH.			APRIL.			MAY.			JUNE.		
	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.
United States	49	14	20	41	14	15	33	19	22	46	19	16	38	17	17	26	9	10
Foreign	79	38	28	51	21	43	95	35	39	63	23	32	61	19	35	60	31	27
Mixed	29	7	9	26	6	7	25	14	10	31	7	7	32	6	5	31	7	6
One parent known	5	1	. .	5	. .	. .	6	. .	1	14	1	. .	7	1	. .	13		
Unknown	4	1	1	1	. .	. .	6	2	1	15	1	. .	3	1	1	7		
Total	166	61	58	124	41	65	165	70	73	169	51	55	141	44	58	137	47	43

	JULY.			AUGUST.			SEPTEMBER.			OCTOBER.			NOVEMBER.			DECEMBER.		
	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.	Under 1 yr.	1 yr. and under 2 yrs.	2 yrs. and under 5 yrs.
United States	109	14	11	97	8	13	56	5	11	31	9	8	39	17	17	53	9	20
Foreign	224	39	27	193	25	21	128	28	21	94.	20	33	79	20	26	66	33	38
Mixed	76	13	7	82	11	4	34	10	9	22	5	3	30	16	6	35	14	16
One parent known	21	4	. .	20	1	1	11	1	1	9	. .	. .	5	1	. .	5	1	
Unknown	14	. .	1	18	1	1	7	. .	. .	2	. .	1	2	1	1	2		
Total	444	70	46	410	46	40	236	44	42	158	34	45	155	55	50	161	57	74

Table XVIII. — Cases Reported, and Deaths from Small-pox, Diphtheria, Scarlet Fever, and Typhoid Fever, with Percentages.

DATE.	SMALL-POX.[1]		Percentages.	DIPHTHERIA.		Percentages.	SCARLET FEVER.		Percentages.	TYPHOID FEVER.		Percentages.
	Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.	
1872	2,592	738	28.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
1873	1,103	302	27.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
1874	7	2	28.5	.....	.....	.....	.....	.....	.....	.....	.....	.....
1875	5	1	20.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
1876	6	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1877	17	4	23.5	.....	.....	.....	1,334	104	7.7	.....	.....	.....
1878	.....	.....	.....	1,370	448	32.7	848	68	8.0	.....	.....	.....
1879	.....	.....	.....	1,167	391	33.5	951	149	16.6	.....	.....	.....
1880	4	1	25.0	1,715	588	34.2	497	33	6.6	Oct. 1 to Dec. 31.	Oct. 1 to Dec. 31.	
1881	44	6	13.6	1,680	601	35.7	383	35	9.1	335	76	26.8
1882	24	8	33.3	1,386	458	33.04	689	75	10.8	808	212	26.2
1883	8	1	12.4	1,415	444	31.4	1,408	211	14.9	887	198	22.3
1884	1	1	100.0	1,212	345	28.46	2,526	209	8.2	948	216	22.6
1885	11	1	9.0	1,263	334	26.44	1,665	156	9.2	767	152	19.8
1886	1	.....	.....	1,188	329	27.69	1,149	81	7.0	814	135	16.5
1887	4	.....	.....	1,049	316	30.12	1,549	195	12.58	940	183	19.46
1888	8	1	12.4	1,411	470	33.30	707	65	9.19	924	170	18.39
1889	10	2	20.0	1,814	564	31.09	464	23	4.96	1,071	186	17.37
1890	1	.....	.....	1,475	401	27.18	924	42	4.54	847	155	18.29
1891	.....	.....	.....	831	232	27.91	1,327	64	4.82	966	154	15.94
1892	.....	.....	.....	1,353	414	30.59	2,938	262	8.91	765[2]	137	17.90

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[1] Exclusive of quarantine.

[2] Of these cases, 3 were brought into the city.

Table XIX. — Result of Examination of Houses where Diphtheria[1] was reported to exist.

WARD.	Defective Sanitary Condition.	Premises in good Sanitary Condition.	Other Cases.[2]	Total.	Fatal Cases.
I.	23	3	2	28	5
II.	26	3	2	31	13
III.	13	3	2	18	2
IV.	11	6	3	20	4
V.	12	5	4	21	2
VI.	30	9	4	43	7
VII.	15	16	2	33	3
VIII.	15	12	3	30	1
IX.	9	4	. . . . .	13	2
X.	5	3	1	9	3
XI.	15	15	3	33	4
XII.	25	13	4	42	7
XIII.	84	39	13	136	32
XIV.	45	53	13	111	25
XV.	17	35	6	58	11
XVI.	29	13	5	47	4
XVII.	15	8	1	24	3
XVIII.	12	7	5	24	190[3]
XIX.	49	37	3	89	18
XX.	37	55	9	101	14
XXI.	19	23	4	46	5
XXII.	21	31	5	57	13
XXIII.	33	43	10	86	11
XXIV.	101	99	17	217	29
XXV.	20	13	3	36	6
Total	681	548	124	1,353	414

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[1] Number of true cases reported, 1,353.

[2] The figures in this column show the number of places where premises were examined just prior to receipt of notice of diphtheria.

[3] Of 190 deaths, 189 occurred at the Boston City Hospital.

Table XX. — Showing the Yearly Mortality from Small-pox, Diphtheria, Scarlatina, Typhoid Fever, Typhus Fever, Cholera, and Yellow Fever, for a Period of 34 to 53 Years.

DATE.	Small-pox.	Diphtheria.	Scarlet Fever.	Typhoid Fever.[1]	Typhus Fever.	Cholera.	Yellow Fever.
1840	115	. . .	57	. . .	69	. . .	. . .
1841	57	. . .	87	. . .	45	. . .	. . .
1842	42	. . .	248	. . .	65	. . .	. . .
1843	55	. . .	42	. . .	72	. . .	. . .
1844	. . .	. . .	229	. . .	73	. . .	. . .
1845	31	. . .	156	. . .	97	. . .	. . .
1846	92	. . .	106	. . .	133	. . .	. . .
1847	23	. . .	59	. . .	666	. . .	. . .
1848	21	. . .	177	. . .	258	. . .	. . .
1849	21	. . .	317	30	119	611	. . .
1850	192	. . .	69	43	61	1	. . .
1851	63	. . .	50	82	88	5	. . .
1852	12	. . .	269	66	46	. . .	. . .
1853	6	. . .	229	67	44	. . .	. . .
1854	118	. . .	65	62	38	218	. . .
1855	132	. . .	74	78	12	. . .	. . .
1856	78	. . .	382	70	6	. . .	. . .
1857	2	. . .	403	83	3	. . .	1
1858	3	. . .	139	73	2	1	5
1859	156	19[4]	142	74	. . .	. . .	. . .
1860	162	1	149	110[2]	. . .	. . .	. . .
1861	7	17	195	96[2]	. . .	. . .	. . .
1862	13	46	236	85	. . .	2[3]	. . .
1863	11	108	130	130	. . .	2[3]	. . .
1864	113	118	225	107	10	. . .	. . .
1865	115	51	50	125	12	4[3]	. . .
1866	51	52	60	93	8	11	. . .
1867	144	47	306	86	3	1[3]	1
1868	8	67	226	120	1	2[3]	1
1869	6	61	330	148	. . .	. . .	. . .
1870	32	51	205	168	. . .	. . .	1
1871	28	39	111	176	. . .	4[3]	. . .
1872	738	28	258	229	. . .	. . .	. . .

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[1] The discrepancy between this table and that of Dr. Erwin F. Smith, on page 45, is due to a difference in classification.

[2] For County of Suffolk, including typhoid, typhus, infantile, and continued fevers.

[3] Doubtful.

[4] First recognized as a disease in Boston in 1859.

Table XX. — *Concluded.*

DATE.	Small-pox.	Diphtheria.	Scarlet Fever.	Typhoid Fever.	Typhus Fever.	Cholera.	Yellow Fever.
1873	302	59	474	243	. . .	. . .	. . .
1874	2	72	269	202	. . .	. . .	. . .
1875	1	420	534	227	. . .	. . .	. . .
1876	2	577	458	145	. . .	. . .	. . .
1877	4	364	104	156	2	. . .	2
1878	. . .	448	68	120	. . .	. . .	. . .
1879	. . .	391	149	119	1	. . .	. . .
1880	1	588	33	154	. . .	. . .	. . .
1881	6	601	35	207	. . .	. . .	. . .
1882	8	458	75	212	. . .	. . .	. . .
1883	1	445	211	198	2	. . .	. . .
1884	1	345	209	216	1	. . .	1
1885	2	334	156	152	. . .	. . .	1
1886	. . .	329	81	135	. . .	. . .	. . .
1887	. . .	316	195	183	. . .	. . .	. . .
1888	2	470	65	170	1	. . .	. . .
1889	2	564	23	186	. . .	. . .	. . .
1890	. . .	401	42	155	. . .	. . .	. . .
1891	. . .	232	64	154	. . .	. . .	. . .
1892	. . .	414	262	137	. . .	. . .	. . .

Table XXI.[1] — Diseases arranged Alphabetically.

Abortion	4
Abscess, unclassified	19
" of abdomen	4
" of brain	2
" of liver	6
" of pelvis	4
" of thigh	1
Accidents (unclassified)	76
" burns and scalds	42
" drowned	54
" elevator	5
" fall	48

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[1] This table does not include the total number of deaths.

Accidents, fracture of leg	6
“ “ of neck	4
“ “ of ribs	5
“ “ of thigh	12
“ “ of skull	42
“ “ of spine	4
“ poisoning	11
“ “ by illuminating gas	12
“ railroad	80
“ suffocation	12
Alcoholism	72
Anæmia	7
“ pernicious	18
Aneurism of aorta	7
Angina pectoris	17
Anus, imperforate	4
Appendicitis	27
Apoplexy	358
Asthenia	5
Asthma	9
Atelectasis pulmonum	18
Asphyxia of new-born	18
Brain, disease of (unclassified)	39
“ abscess of	2
“ cancer of	1
“ concussion of	1
“ congestion of	14
“ embolism of	8
“ inflammation of	13
“ softening of	23
“ tumor of	14
Bronchitis (unclassified)	353
“ acute	58
“ capillary	71
“ chronic	75
Cancer (unclassified)	70
“ of abdomen	3
“ of bladder	2

Cancer of bowels	20
“ of breast	36
“ of brain	1
“ of face	8
“ of kidney	2
“ of liver	37
“ of neck	2
“ of œsophagus	4
“ of ovaries	3
“ of pancreas	2
“ of rectum	12
“ of stomach	53
“ of throat	5
“ of tongue	5
“ of uterus	63
Carbuncle	4
Cholera infantum	563
“ morbus	23
Cellulitis	6
Cirrhosis (unclassified)	5
Cirrhosis of liver	44
Convulsions	115
Croup	67
Cystitis	18
Cyanosis	24
Debility	52
Diabetes	19
“ mellitus	13
Diarrhœa	77
Diphtheria	414
Dysentery	30
Embolism (unclassified)	10
“ of brain	8
“ of heart	1
“ of lungs	5
Emphysema	3
Empyema	12
Enteritis	44

Entero-colitis	33
Epilepsy	11
Erysipelas	37
Fever, puerperal	28
“ scarlet	262
“ typhoid	137
Gangrene	22
Gastro-enteritis	138
Goitre (exophthalmic)	4
Heart disease (unclassified)	613
“ dilatation of	11
“ embolism of	1
“ endocarditis	44
“ fatty degeneration of	32
“ hypertrophy of	4
“ malformation of	3
“ pericarditis	14
“ valvular	168
Hernia, strangulated	25
“ congenital	1
“ inguinal	5
Hip disease	4
Hydrocephalus and tubercular meningitis	204
Homicide	16
Inanition	119
Insanity	27
Jaundice	3
Kidney diseases (unclassified)	7
“ Bright’s disease of	158
“ cancer of	2
“ inflammation of	189
Laryngitis	6
Leucocythæmia	2
Lead poisoning	2
Liver diseases (unclassified)	36
“ abscess of	6
“ cancer of	37
“ cirrhosis of	44

Liver, inflammation of	9
Locomotor ataxia	6
Lung diseases (unclassified)	4
" congestion of	24
" œdema of	10
" consumption of	1,414
" embolism of	5
" inflammation of	1,122
Lupus	1
Malformation of heart	3
Measles	19
Meningitis	306
" cerebro-spinal	12
Mumps	2
Obstruction of bowels	28
Old age	258
Ovarian cancer	3
" tumor	5
Paralysis	103
Prostate gland (disease of)	4
Peritonitis	133
Pleurisy	25
Pneumonia	1,015
" broncho	93
" pleuro	14
Poisoning (accidental)	11
Premature birth	188
Puerperal diseases, not including puerperal fever	27
Pyæmia	9
Rheumatism	43
Scrofula	10
Septicæmia	28
Small-pox	—
Softening of brain	23
Sarcoma	8
Spinal disease (unclassified)	14
" disease, Pott's	7
" inflammation	7

Spina bifida	1
Stomach, inflammation of	32
" ulceration of	9
Suffocation	12
Suicide	76
Sunstroke	32
Surgical operation (death following)	17
Syphilis	3
" congenital	12
Tabes-mesenterica, and marasmus	317
Teething	5
Tetanus	7
Tonsilitis	9
Tuberculosis	149
Tumor (unclassified)	3
" of abdomen	8
" of brain	14
" of ovary	5
" of uterus	3
Uterine disease, cancer	63
" tumor	3
Umbilical hæmorrhage	1
Uræmia	19
Whooping-cough	45

COMPARATIVE DEATHS IN AMERICAN AND FOREIGN CITIES.

The following tables have been prepared to show the comparison of deaths of a few large American and foreign cities, as compared with the city of Boston. It is to be regretted that the amount of information desired is not fully complete, owing to the scarcity of material and information furnished, but in their present condition, as a matter of reference, they may be of value.

Boston.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	362,535	8,531	37,138	3,349	588	33	154	49
1881	397,628	9,016	37,424	3,314	601	35	207	108
1882	410,376	8,995	37,710	3,151	458	75	212	25
1883	427,940	9,740	37,996	3,627	445	211	198	152
1884	427,940	9,622	38,282	3,570	345	209	216	13
1885	400,000	9,618	38,569	3,466	334	156	152	84
1886	400,000	9,268	38,855	3,186	329	81	135	36
1887	400,000	10,073	39,141	3,662	316	195	183	119
1888	415,000	10,197	39,428	3,509	470	65	170	27
1889	420,000	10,259	39,714	3,633	564	23	186	48
1890	448,477	10,181	40,001	3,349	401	42	155	19
1891	459,062	10,571	40,287	3,608	232	64	154	21
1892	469,647	11,236	40,573	3,735	414	262	137	19

New York, N.Y.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.*	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 *	1,209,268	31,937	140,673	14,650	1,390	618	372	479
1881	1,246,011	38,624	144,947	17,737	2,249	1,964	594	429
1882	1,283,870	37,924	149,351	17,520	1,525	2,066	516	913
1883	1,322,880	34,011	153,889	13,856	1,009	744	625	716
1884	1,363,075	35,044	158,565	15,272	1,090	608	476	762
1885	1,404,401	35,682	163,383	15,267	1,325	559	405	736
1886	1,447,166	37,351	168,347	16,121	1,727	371	433	668
1887	1,491,137	38,933	173,462	16,766	2,167	569	421	767
1888	1,536,444	40,175	178,733	17,358	1,914	1,361	364	591
1889	1,583,120	39,679	184,164	17,152	1,686	1,242	397	470
1890	1,631,232	40,103	189,760	16,305	1,262	408	352	730
1891	1,680,796	43,659	195,525	18,224	1,361	1,220	384	663
1892	1,827,396	44,317	. . . . .	18,589	1,425	975	399	863

* The population is estimated by taking the preliminary figures of the census of 1890 as a basis, and from that and the census of 1880 calculating the intervening numbers. We have no figures for ages since 1880, so that the number under five are estimated to be in the same ratio to the entire population as in 1880.

Philadelphia, Pa.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.†	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880 *	846,980	17,711	*91,544	6,594	323	291	498	108
1881	868,000	19,515	†92,744	7,124	457	486	645	17
1882	886,539	20,059	94,004	7,254	933	310	650	91
1883	907,041	20,076	95,234	7,417	1,006	561	579	58
1884	927,995	19,999	96,465	7,606	680	540	662	96
1885	949,432	21,392	97,695	8,188	600	375	610	131
1886	971,363	20,005	98,925	7,351	411	248	618	19
1887	993,801	21,719	100,155	8,421	416	159	621	358
1888	1,016,758	20,372	101,386	7,269	350	235	785	24
1889	1,040,245	20,536	102,616	7,752	375	298	736	92
1890 *	1,046,964	21,732	*103,847	7,913	528	189	666	105
1891	1,069,264	23,367	105,077	8,479	918	341	684	25
1892	1,092,168	24,305	. . . . .	9,305	1,425	484	539	74

* Census years. † Estimated on the increase of census years.

Chicago, Illinois.

Years.	Population Estimated.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	503,298	10,462						
1881	540,000	13,874						
1882	560,639	13,234	. . . . .	6,645				
1883	580,000	11,555	. . . . .	5,875				
1884	630,000	12,471	. . . . .	6,666				
1885	665,000	12,474	. . . . .	6,187	706	279	496	78
1886	704,000	13,699	. . . . .	6,763	944	220	483	126
1887	760,000	15,409	. . . . .	7,568	1,002	190	381	341
1888	830,000	15,772	. . . . .	7,533	858	184	375	151
1889	1,106,000	16,946	. . . . .	8,204	1,126	185	453	204
1890	1,200,000	21,869	. . . . .	9,954	881	193	1,008	67
1891	1,250,000	27,754	. . . . .	12,801	958	499	1,997	265
1892	1,438,000	26,219	. . . . .	11,662	1,014	382	1,489	185

London, England.

Years.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	*3,771,139	81,832	. . . . .	36,220	544	3,100	702	1,521
1881	3,824,960	81,071	497,044	33,325	654	2,108	977	2,533
1882	3,862,876	82,905	. . . . .	36,259	863	2,004	975	2,329
1883	3,901,164	80,578	. . . . .	33,552	951	1,989	935	2,420
1884	3,939,832	83,050	. . . . .	36,030	973	1,444	936	2,285
1885	3,978,883	80,000	. . . . .	32,913	896	707	586	2,928
1886	4,018,321	82,276	. . . . .	34,319	846	688	618	2,078
1887	4,058,150	82,304	. . . . .	35,236	953	1,419	612	2,904
1888	4,098,374	79,099	. . . . .	32,669	1,311	1,190	694	2,425
1889	4,138,996	76,026	. . . . .	30,469	1,616	771	538	2,308
1890	4,180,021	89,554	. . . . .	36,123	1,417	876	618	3,291
1891	4,221,452	90,216	*501,558	33,340	1,361	589	547	1,807

* Estimated.

Berlin, Germany.

YEARS.	Population.	Total Deaths.*	Population of Children under 5 years of age.	Deaths of Children under 5 years of age.†	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
Beginning	1,089,070	.....	142,476					
1880	.....	32,823	.....	19,249	1,198	872	527	376
End	1,123,749	.....	183,060					
1881	.....	31,055	.....	17,483	1,593	903	352	201
End	1,158,559	.....	143,828					
1882	.....	30,465	.....	16,990	1,914	604	357	144
End	1,196,205	.....	146,138					
1883	.....	35,056	.....	19,902	2,651	867	222	1,173
End	1,232,716	.....	144,464					
1884	.....	32,932	.....	18,440	2,446	395	243	295
End	1,271,677	.....	144,620					
1885	.....	31,483	.....	15,558	1,816	409	214	406
End	1,315,656	.....	146,227					
1886	.....	34,293	.....	19,215	1,535	271	181	565
End	1,363,031							
1887	.....	30,336	.....	15,777	1,305	257	193	223
End	1,415,269							
1888	.....	29,298	.....	15,076	1,018	201	188	364
End	1,472,151							
1889	.....	34,460	.....	18,394	1,189	244	290	201
End	1,528,721							
1890	.....	33,393	.....	17,630	1,492	298	143	441
End	*1,579,524	.....	†164,370					
1891	1,601,327	.....	.....	16,800	1,010	150	166	130

* Census of December 1, 1890.

† Excluded: Still-born, 1,749, 1,771, 1,759, 1,707, 1,773, 1,848, 1,710, 1,761, 1,756, 1,789, 1,473.

Paris, France.

YEARS.	Population.	Total Deaths.	*Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	. . . . .	55,706	. . . . .	17,674	2,048	345	2,008	962
1881	2,239,928	55,103	148,601	17,159	2,211	440	1,955	897
1882	. . . . .	56,854	. . . . .	17,158	2,244	156	3,214	1,005
1883	. . . . .	54,763	. . . . .	16,843	1,781	88	1,880	1,043
1884	. . . . .	55,059	. . . . .	16,968	1,928	155	1,503	1,501
1885	. . . . .	52,726	. . . . .	15,244	1,655	191	1,320	1,524
1886	2,260,945	55,110	146,177	16,493	1,512	403	954	1,210
1887	. . . . .	52,836	. . . . .	15,206	1,585	224	1,385	1,628
1888	. . . . .	51,230	. . . . .	14,463	1,729	193	756	915
1889	. . . . .	54,083	. . . . .	14,679	1,706	170	1,008	1,190
1890	. . . . .	54,566	150,490	15,068	1,668	223	656	1,495
Census of 12th April, 1891 .	2,424,705							
1891 do. . . .	2,424,705	54,443	150,490	14,048	1,531	208	549	1,020

*Estimated.

Glasgow, Scotland.

YEARS.	Population.	Total Deaths.	Population of Children under 5 yrs. of age.	Deaths of Children under 5 yrs. of age.	Deaths from Diphtheria.	Deaths from Scarlatina.	Deaths from Typhoid Fever.	Deaths from Measles.
1880	. . . . .	13,303	. . . . .	6,071	150	453	278	331
1881 Census .	511,415	12,909	69,931	5,386	162	256	166	333
1882	. . . . .	12,985	. . . . .	5,972	177	263	162	213
1883	. . . . .	14,476	. . . . .	6,494	132	449	167	605
1884	. . . . .	13,839	. . . . .	6,174	157	412	184	335
1885	. . . . .	13,444	. . . . .	6,156	112	288	102	430
1886	. . . . .	13,053	. . . . .	5,601	111	345	81	90
1887	. . . . .	12,055	. . . . .	5,367	174	234	100	302
1888	. . . . .	11,533	. . . . .	4,743	168	163	59	205
1889	. . . . .	12,890	. . . . .	5,970	167	109	111	594
1890	. . . . .	13,222	. . . . .	5,768	139	124	108	583
1891 Census .	565,710	14,149	72,481	5,432	131	201	123	400

CHOLERA INFANTUM.

Comparison of Deaths from Cholera Infantum for Three Months of each Year during a Period of Twenty-two Years, with Temperature and Humidity, also Percentages to the Total Mortality.

DATE.	CHOLERA INFANTUM.					TEMPERATURE.											
						June.				July.				August.			
	June.	July.	August.	Total Deaths.	Percentage to total Mortality.	Highest Temp.	Lowest Temp.	Mean Temp.	Mean Humidity.	Highest Temp.	Lowest Temp.	Mean Temp.	Mean Humidity.	Highest Temp.	Lowest Temp.	Mean Temp.	Mean Humidity.
1871	20	245	160	425	7.21	91.	50.	55.9	57.2	92.	57.	70.8	59.2	89.	55.	71.2	71.2
1872	26	327	231	584	7.21	93.5	47.	58.2	71.3	98.5	55.	74.7	67.6	95.	50.	72.4	75.5
1873	19	168	263	450	5.71	93.0	47.	67.8	59.2	96.	55.	73.	69.4	96.	50.	68.9	69.4
1874	12	152	276	440	5.63	98.	49.	66.1	69.1	94.	46.	72.8	69.9	91.	51.	58.1	70.
1875	13	215	268	496	5.47	94.	46.	66.7	64.	93.	54.	71.4	68.1	87.	54.	70.2	75.7
1876	18	220	198	436	5.28	90.	44.	58.1	74.5	96.	52.	73.8	69.4	96.	50.	59.9	68.2
1877	14	206	180	400	5.46	92.	47.	66.9	56.8	91.	57.	70.1	75.9	92.	58.	71.	78.5
1878	6	135	154	295	3.78	92.	45.	64.1	57.	98.	54.	72.9	67.1	87.	53.	67.8	68.3
1879	8	102	175	280	3.78	96.	45.	64.1	70.4	94.	50.	70.	68.8	95.	52.	68.1	72.7
1880	24	179	182	385	4.51	93.	48.	67.3	67.4	101.	52.	70.1	73.2	96.	47.	68.9	72.6
1881	. .	104	196	300	3.32	86.	44.	60.6	70.	89.	54.	68.5	73.1	97.	53.	69.5	74.
1882	11	187	197	395	4.39	94.	48.	65.9	63.8	98.	52.	71.7	65.1	92.	51.	70.	66.
1883	23	228	199	450	4.62	90.5	51.	69.	72.9	96.	51.4	71.1	71.7	91.8	48.	67.6	66.8
1884	11	158	179	348	3.61	92.6	42.	66.	74.5	90.3	53.6	68.	75.5	94.3	51.	68.2	84.5
1885	16	226	135	377	3.91	91.9	45.3	66.4	62.	92.8	51.4	71.3	69.8	88.8	47.2	67.4	76.
1886	5	170	151	326.	3.51	81.7	50.3	63.1	70.6	95.4	54.5	70.8	69.8	90.4	49.3	67.7	71.7
1887	6	223	175	414	4.10	89.	47.5	64.5	71.7	95.	61.	73.	77.	86.3	52.2	67.1	74.2
1888	6	130	192	328	3.21	96.	49.	68.4	68.	88.	51.	68.3	68.06	88.2	52.	69.	70.7
1889	28	200	124	352	3.43	87.	50.	67.7	79.3	86.	55.	69.	82.2	84.	52.	67.4	78.6
1890	5	178	206	389	3.82	87.	50.	64.2	67.	95.	52.	71.	67.	89.	50.	68.9	75.6
1891	23	236	206	465	4.39	96.	45.	65.0	70.8	90.	56.	69.	72.	90.	54.	70.0	78.0
1892	16	269	196	481	4.28	96.	49.	70.0	70.	96.	54.	73.	63.	94.	55.	70.	77.

CONTAGIOUS DISEASES.

The number of contagious diseases reported to the Board of Health for the year 1892 was 6,619, against 5,712 in 1891. The total number of deaths from the same diseases in 1892 was 832, against 471 in 1891. Measles has been quite prevalent. There were 1,563 cases reported and 19 deaths in 1892, as compared with 2,588 reported cases and 21 deaths in 1891. Typhoid fever was reported in 765 cases, and there were 137 deaths, against 966 cases and 154 deaths in 1891. There were 1,353 cases of diphtheria reported with 414 deaths, as compared with 833 cases and 232 deaths in 1891. Although there has been an increase in the prevalence of scarlet fever this year, the disease has not been of an exceptionally severe type. The number of cases reported during the year has been 2,938 with 262 deaths, as compared with 1,327 cases and 64 deaths in 1891. It is frequently said that scarlet fever is now much more prevalent than formerly; but a careful study of mortuary statistics for the past forty-six years proves that this disease is diminishing in frequency and in severity. A study of the following table, carefully compiled, shows that for the four years from 1846 to 1849, inclusive, the ratio of deaths from scarlet fever per 10,000 of the living was 13.0; that in the semi-decade from 1850 to 1854 the rate was 9.4; that in the semi-decade from 1855 to 1859 the ratio of deaths per 10,000 of the living was 13.8; that for the five years from 1860 to 1864, 10.2; that from 1865 to 1869 the rate was 9.0; that from 1870 to 1874 the ratio per 10,000 of the living was 9.9. In the semi-decade from 1875 to 1879, 7.3 persons out of 10,000 living died from this disease; from 1880 to 1884 there was a very marked diminution in the rate, it being 2.7, as compared with 7.3 in the previous semi-decade. From 1885 to 1889 the rate per 10,000 was 2.6. Although the rate per 10,000 for 1892 is 5.6, it is not much higher than it was in 1887. If the rate for the three years from 1890 to 1892 is compared with that of any of the previous semi-decades, notably that from 1875 to 1879, it will be seen that there has been a marked diminution in the fatality from this disease; the rate for the former period being 2.6 and that of the latter 7.3. The difficulties of dealing with a disease like scarlet fever are very great. The number of mild cases unrecognized and unreported in the community, and the length of time required for the process of desquamation, render the work of stamping out the disease impossible.

Table of Deaths from Scarlet Fever from 1846 to 1892.

Years.	Population (estimated or enumerated).	Scarlet Fever.		
		Total Deaths.	Deaths per 10,000 living.	
1846	116,865	106	9.0	13.0
1847	122,346	59	4.8	
1848	127,827	177	13.8	
1849	133,308	317	24.5	
1850	138,788	69	5.0	9.4
1851	142,693	50	3.5	
1852	146,598	269	18.4	
1853	150,503	229	15.2	
1854	154,408	65	4.2	
1855	158,313	74	4.7	13.8
1856	162,218	382	23.5	
1857	166,123	403	24.3	
1858	170,028	139	8.2	
1859	173,934	142	8.2	
1860	177,840	149	8.4	10.2
1861	180,735	195	10.8	
1862	183,630	236	12.9	
1863	186,526	130	7.0	
1864	189,422	225	11.9	
1865	192,318	50	2.6	9.0
1866	195,214	60	3.1	
1867	198,110	306	15.4	
1868	230,911	226	9.8	
1869	236,000	330	14.0	
1870	250,526	205	8.2	9.9
1871	256,000	111	4.3	
1872	254,400	258	10.1	
1873	260,000	474	18.2	
1874	313,745	269	8.6	
1875	360,122	534	14.8	7.3
1876	352,842	458	13.0	
1877	363,000	104	2.9	
1878	363,000	68	1.9	
1879	363,000	149	4.1	
1880	362,839	33	.9	2.7
1881	397,628	35	.9	
1882	410,376	75	1.8	
1883	427,940	211	4.9	
1884	427,940	209	4.9	
1885	400,000	156	3.9	2.6
1886	400,000	81	2.0	
1887	400,000	195	4.9	
1888	415,000	65	1.6	
1889	420,000	23	.5	
1890	448,477	42	.9	2.6
1891	459,062	64	1.4	
1892	469,647	262	5.6	

CONSUMPTION.

The influence of deaths from consumption on the death-rate of Boston during the past year has been as marked as in previous years. In 1892 the number of deaths from this cause was 1,414; the percentage to the total mortality, 12.58; and the rate per 10,000 of the living, 30.1; as compared with 1,352 deaths in 1891, a percentage to the total mortality of 12.78 and a rate per 10,000 of the living of 29.4. This slight increase in the rate of deaths from consumption during the past year was probably due to the epidemic of influenza which commenced in December of 1891 and continued through January and February of 1892. Aside from the question of contagion it seems probable that sudden changes of temperature may have an important influence in causing the prevalence of the disease. Since 1870 there has been a marked diminution in the number of deaths from consumption in this city. The table on page 42 gives the rate of deaths from consumption per 10,000 of the living from 1870 to 1892 inclusive. It will be seen that in the semi-decade from 1870 to 1874 the rate per 10,000 was 43.1; that from 1875 to 1879 the rate per 10,000 was 36.2; that from 1880 to 1884, 38.0; that from 1885 to 1889, 37.0; and that for the three years from 1890 to 1892, 30.9. This diminution is probably due to better hygienic conditions, and to improved methods in the treatment of the disease. Chart 1 shows the number of deaths from this disease during the year, by months, and also the average mean temperature of each month. By following the line indicating the deaths it will be seen that during the month of January with an average mean temperature of 28.3° F. there were 150 deaths, while in December with an average temperature of 29.9° F. there were 116 deaths. If January and February, which have the same average mean temperature, are compared it will be seen that the number of deaths in the former month was much greater than in the latter. The comparatively great number of deaths from consumption in January was due, without doubt, to the influence of the epidemic of influenza on this disease. It would naturally be supposed that the cold winds of March would have a particularly injurious effect on patients ill with consumption. Such was not the fact, however, in 1892, for from a glance at the chart it will be seen that the number of deaths was much greater in April than it was in March. In 1892 June was the most favorable month for consumptives so far as the death-rate is concerned, and of the warmer months July was the most unfavorable. August, September, and October have a comparatively low death-rate from consumption. By following the red line which indicates the average mean temperature it will be seen that there is no direct relation between the number of deaths from consumption and a low temperature.

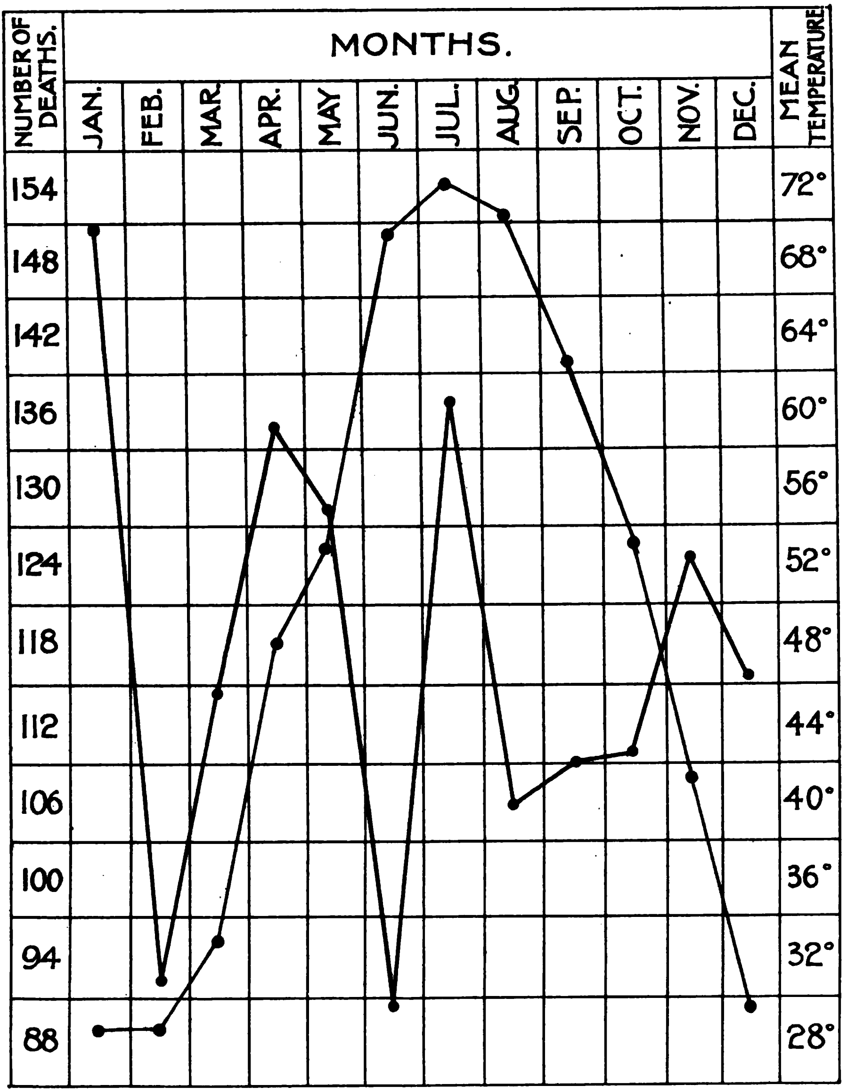
Table of Deaths from Consumption from 1870 to 1892.

YEARS.	Population (estimated or enumerated.)	Consumption.		
		Total Deaths.	Deaths per 10,000 of the living.	
1870	250,526	990	39.5	43.1
1871	256,000	1,080	42.1	
1872	254,400	1,161	45.6	
1873	260,000	1,194	45.9	
1874	313,745	1,333	42.4	
1875	360,122	1,357	37.6	36.2
1876	352,842	1,268	35.9	
1877	363,000	1,273	35.0	
1878	363,000	1,391	38 3	
1879	363,000	1,252	34.4	
1880	362,839	1,452	40.0	38.0
1881	397,628	1,564	39.4	
1882	410,376	1,579	38.3	
1883	427,940	1,549	36.2	
1884	427,940	1,543	36.2	
1885	400,000	1,523	38.0	37.0
1886	400,000	1,607	40.1	
1887	400,000	1,526	38.1	
1888	415,000	1,464	35.2	
1889	420,000	1,431	34.0	
1890	448,477	1,495	33.3	30.9
1891	459,062	1,352	29.4	
1892	469,647	1,414	30.1	

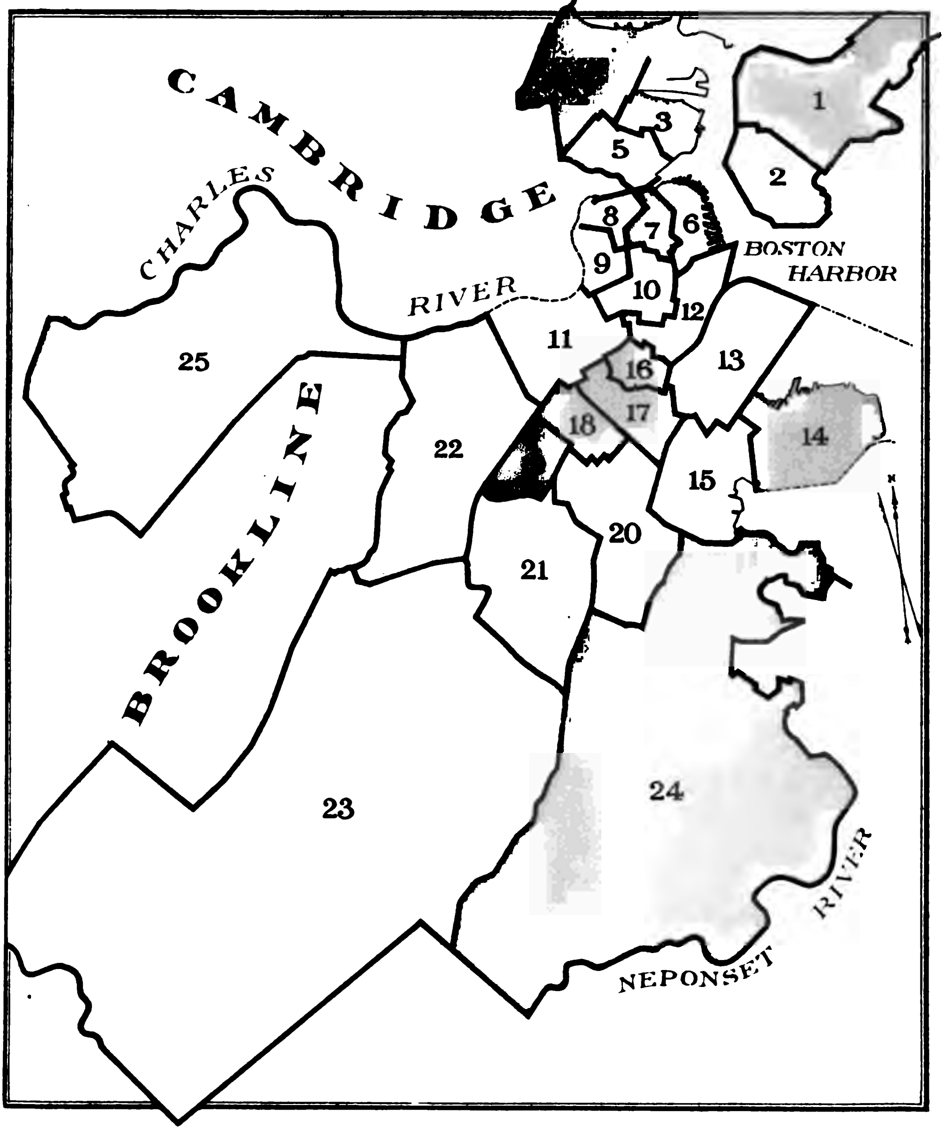
Chart 2 shows the ratio of deaths from consumption to the thousand of population, by wards, for 1891 and 1892, 1.

Chart of the Deaths from CONSUMPTION, by Months, with the Mean Temperature for 1892.

No. of Deaths— .... *Mean Temperature* — ———



RATIO OF DEATHS FROM
CONSUMPTION
TO THE THOUSAND OF POPULATION, BY WARDS, FOR 1892.



Ratio 1 to 2 per 1000 = ☐
" 2 " 3 " 1000 = ☐
" 3 " 4 " 1000 = ☐
" over 4 " 1000 = ☐

with the number of inhabitants to the acre in 1892, and the maximum and minimum elevation in feet above mean low water. By following the line indicating the ratio of deaths in each ward for 1891, and the one indicating the ratio for 1892, it will be seen that in Wards 1, 2, 3, 4, 9, 13, and 15 there was a marked increase in 1892 as compared with 1891; that in Wards 5, 6, 7, 8, 10, 11, 12, 14 there was a marked decrease in 1892; while in the remaining wards there was very little difference between the ratios for 1892 and those for 1891. The elevation above mean low water does not seem to have any special influence on the prevalence of this disease. In Ward 11, which has only a maximum elevation of 31 feet, the disease is not so prevalent as in Ward 1 with a maximum elevation of 86 feet; nor as in Ward 23 with an elevation of 301 feet. In Wards 12, 13, 14, and 15 the relative prevalence of the disease is due not so much to their situation in regard to tide level as to their comparatively crowded condition. In Ward 9 the prevalence of the disease is also due to the same cause, there being 151 persons to the acre, and a similar observation is true regarding Ward 16. In the remaining sixteen wards of the city elevation above tide level does not seem to have any effect in diminishing the prevalence of the disease. The accompanying map shows the ratio of deaths from consumption to the thousand of population in each ward for 1892. By reference to the color key it will be seen that Wards 5, 8, 10, 11, 21, 23, and 25 have ratios above one and below two to the thousand of population. Wards 1, 4, 7, 14, 16, 17, 18, 19, and 24 have ratios above two and below three. In Wards 2, 6, 12, 13, 15, 20, and 22 the ratios are between three and four to the thousand of population, and Wards 3 and 9 have ratios respectively of 4.05 and 4.37.

INFLUENZA.

The epidemic of influenza which re-appeared in December, 1891, continued during January, February, and March of 1892. In this city the epidemic was over in April of 1892, but its influence on the death-rate from pulmonary diseases continued to a greater or less extent during the entire year. A study of the table below shows that for January, February, and March of 1891 there were only three deaths from influenza, while in the corresponding months of 1892 there were eighty-six. In December of 1891 there were thirteen deaths from this disease; in December, 1892, there was one death. The total number of deaths from influenza in the year 1891 was thirty-one, as compared with ninety-seven in 1892; more than three times as many. The percentage of deaths from influenza to the total mortality was .86 for 1892.

Table of Deaths from Consumption, Influenza, and Pneumonia for 1891 and 1892.

Diseases.	Months.												Total.	Year.
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.		
Consumption	123	88	98	125	129	119	114	105	111	109	88	148	1,352	1891
Influenza	1	1	1	3	8	3	1	. .	. .	. .	. .	13	31	
Pneumonia	139	121	104	151	131	60	35	27	24	45	89	223	1,149	
Consumption	150	93	114	135	129	90	137	106	109	110	125	116	1,414	1892
Influenza	63	16	7	3	2	2	. .	. .	. .	1	2	1	97	
Pneumonia	240	120	119	102	105	58	36	24	46	45	83	144	1,122	

QUARANTINE.

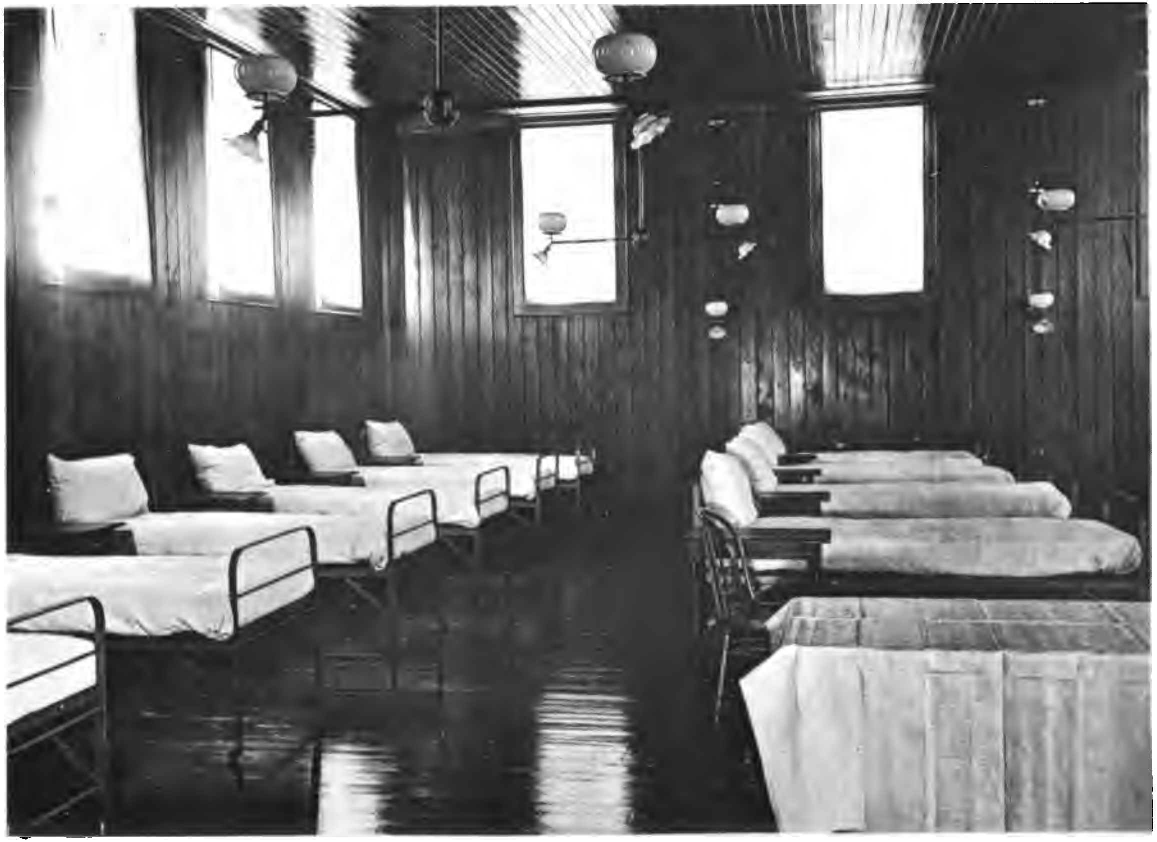
The prevalence of typhus fever in portions of Russia a year ago, and the existence and spread of cholera in many parts of western Europe later in the season, called for unusual care and activity in our quarantine during the summer. In February we began stopping all immigrants from Russia, giving each one a thorough warm bath, and disinfecting their personal clothing and baggage before permitting them to land. In September we extended the same treatment to immigrants from all other countries of Europe. Throughout the season the detention of vessels, persons, and cargoes from infected places for cleaning and disinfection occurred more frequently than usual. These detentions covered periods of from a few hours to twenty-six days for our own quarantine purposes, and the longest detention which occurred under the President's twenty-day proclamation was ten days. It is gratifying to be able to say that no case of cholera was brought to the port during the season, and the number of cases of other contagious diseases were not in excess of an average season.

Some valuable additions have been made to the facilities and accommodations at Gallop's island. The method of giving baths has been made easier by a new building 87 feet long by 20½ feet in width, containing 28 bath tubs supplied with hot and cold water. Two new buildings each 100 feet long by 30½ feet in width have been erected and fitted for dormitory uses, and they will each accommodate 100 persons.

To the old wooden chamber which has been in use for eight years for disinfecting by steam, there has been added a new building with an iron cylinder 20 feet long and 6⅔ feet in diameter, properly fitted up for disinfecting by steam. A detailed statement of the quarantine plant will be found in the appended report of the quarantine physician.

PRECAUTIONS AGAINST CHOLERA.

In September, owing to the fact that cholera had appeared at quarantine in New York, it was deemed advisable to erect a temporary hospital at the South End for the treatment of this disease should it appear in this city. By the advice and consent of His Honor the Mayor, the nursery grounds on East Chester park were taken for this purpose. As the land was composed of loam and fertilizing material, it became necessary to excavate a section, 100 feet long by 40 feet wide, to the depth of about 12 inches. This excavation was partially filled with gravel and ashes, and then covered with a layer of Trinidad asphalt, so as to make an impermeable surface, that could be thoroughly washed with a disinfecting solution. It is of the first importance to disinfect all drainage from a hospital, in the case of a disease like cholera, in order that the hospital itself may not become a source of infection. On this asphalt pavement three polling-booths were erected; the centre building to be used for cooking purposes, the southerly building to be used for a male ward, the northerly one to be used for a female ward. The two wards were supplied with beds. Each ward was supplied with a water-closet and connected with a specially devised pot-trap so that the discharges could be thoroughly disinfected before they were allowed to enter the sewer. Every precaution was taken, in the way of disinfection, so that there should be no danger of contamination either of the sewer or of the soil adjacent to the hospital, from the discharges of cholera patients, should there be any admitted to the hospital. These buildings were heated by stoves and were ready for immediate occupancy during the time when the danger of the advent of the disease was most imminent. The hospital was capable of accommodating 16 patients. In order to protect the North End, the ferry-boat "Ben Franklin" was taken and supplied with beds, and other necessary appliances. The names and addresses of a certain number of persons to act as nurses were obtained. These persons, without being actually engaged, held themselves ready to answer an immediate call. The disinfecting corps were ready, also, to respond immediately to any call by day or night, should their services be required. By an arrangement with one of the hospitals an ambulance could be obtained at very short notice. While these preparations were being made for the establishment of a temporary hospital, land was taken on Swett street, for the erection of a permanent hospital, and also for the erection of a permanent steam disinfecting apparatus. The permanent hospital which is to be used not only for cases of cholera but also for the treatment of typhus fever cases is a one-story building 100 feet long by 35 feet wide. There are accommodations in this building for about 40 patients. It is divided into one large male and one large female ward, and four isolating rooms. It is heated by steam, lighted by gas, and supplied with hot and cold water. The drainage from the hospital enters



HELIOTYPE PRINTING CO., BOSTON.

EPIDEMIC HOSPITAL — Male Ward.

a pot-trap so that it can be thoroughly disinfected before it enters the sewer. A special sewer 600 feet long has also been built. The distance of this building from the street is about 100 feet. Particular attention has been paid to the ventilation. The beds are woven wire springs and hair mattresses. The interior construction of the building is such that it can be very easily and quickly disinfected. The heliotype herewith gives a correct idea of the appearance of one of the wards.

GLANDERS.

There have been eight cases of glanders in horses, all of which were immediately reported to the Cattle Commissioners, and the horses were subsequently killed.

TYPHOID FEVER.

Typhoid fever, although not so prevalent in this city during the year as it has been in previous years, is an important factor in the death-rate from zymotic diseases. The number of reported cases during the year was 765, as compared with 966 in 1891. It was found, however, that, after a careful investigation, 133 of these cases did not originate in the city, and therefore the actual number of cases occurring during the year was 632. The number of deaths was 137, as compared with 154 in 1891. The table on page 48 gives the rate of deaths per 10,000 of the living from 1846 to 1892, inclusive. It will be seen from this table that the rate for 1892, 2.9, is lower than that for any year since 1846. If the rate for the semi-decade from 1885 to 1889 is compared with that for the three years from 1890 to 1892 inclusive, it will be seen that there has been a marked diminution, the rate of the former period being 4.1 while that of the latter is 3.2. This marked diminution in the frequency of the disease may be fairly attributed to the improved water supply and also to better hygienic conditions. There can be no more convincing proof of the influence of a contaminated water supply on the prevalence of this disease than a glance at the table on page 48. It will be seen that from 1846 to 1849 the death-

Table of Deaths from Typhoid Fever, in Boston, from 1846 to 1892.

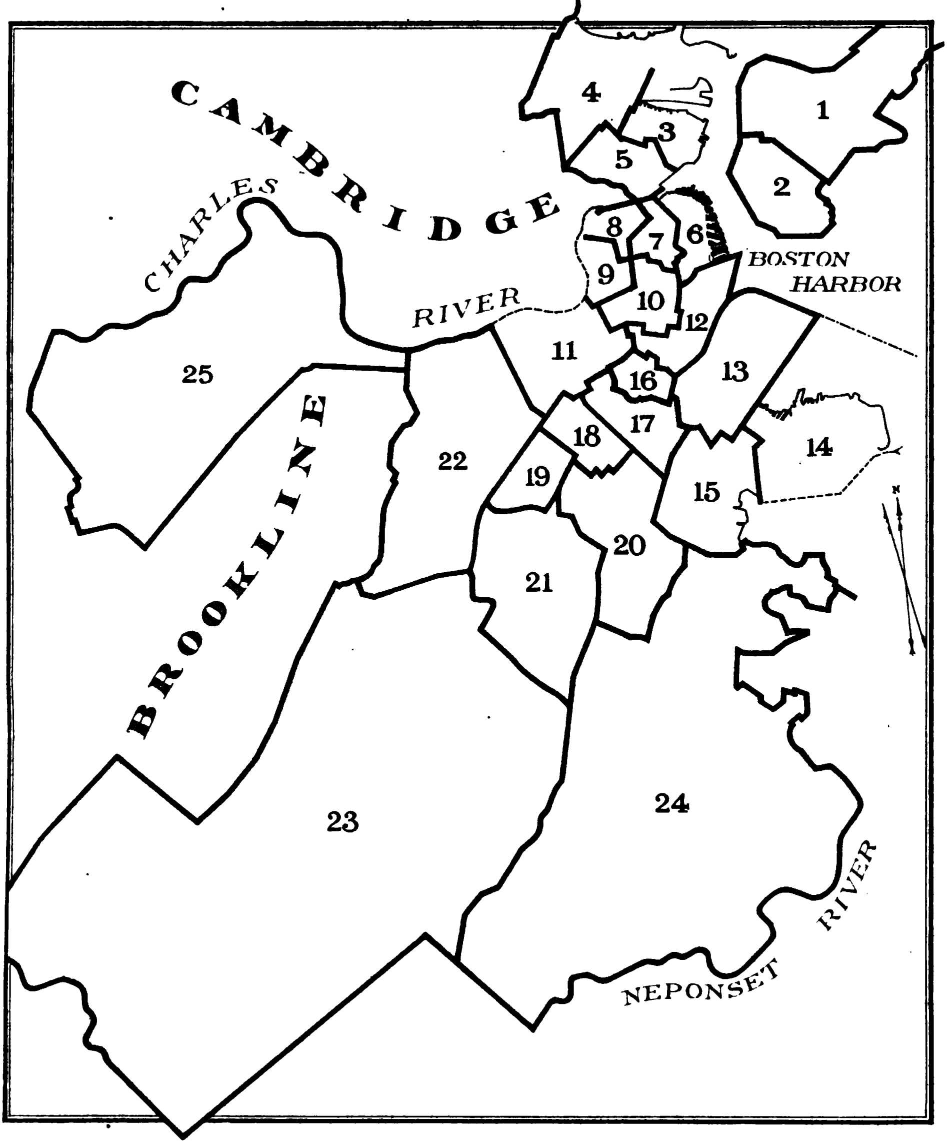
YEARS.	Population (estimated or enumerated).	Typhoid Fever.		
		Total Deaths.	Deaths per 10,000 living.	
1846	116,865	133	11.4	17.4
1847	122,346	300	24.5	
1848	127,827	288	22.5	
1849	133,308	149	11.2	
1850	138,788	104	7.5	8.2
1851	142,693	170	11.9	
1852	146,598	110	7.5	
1853	150,503	111	7.4	
1854	154,408	102	6.6	
1855	158,313	90	5.7	5.0
1856	162,218	76	4.7	
1857	166,123	86	5.2	
1858	170,028	75	4.4	
1859	173,934	85	4.9	
1860	177,840	110	6.2	5.7
1861	180,735	96	5.3	
1862	183,630	74	4.0	
1863	186,526	130	6.9	
1864	189,422	117	6.2	
1865	192,318	137	7.1	5.6
1866	195,214	101	5.2	
1867	198,110	91	4.6	
1868	230,911	120	5.1	
1869	236,000	148	6.2	
1870	250,526	168	6.7	7.6
1871	256,000	176	6.8	
1872	254,400	229	9.0	
1873	260,000	243	9.3	
1874	313,745	202	6.4	
1875	360,122	227	6.3	4.2
1876	352,842	145	4.1	
1877	363,000	156	4.2	
1878	363,000	120	3.3	
1879	363,000	119	3.2	
1880	362,839	154	4.1	4.9
1881	397,628	207	5.2	
1882	410,376	212	5.1	
1883	427,940	198	4.6	
1884	427,940	216	5.4	
1885	400,000	152	3.8	4.1
1886	400,000	135	3.4	
1887	400,000	183	4.6	
1888	415,000	170	4.1	
1889	420,000	186	4.4	
1890	448,477	155	3.5	3.2
1891	459,062	154	3.4	
1892	469,647	137	2.9	

rate per 10,000 of the living was 17.4; that after the introduction of the Cochituate water the rate began to decline, and that it has gradually diminished to 3.2, the average for the past three years. This rate is lower than that of any of the larger cities in this country, and compares very favorably with the rates of foreign cities. The accompanying chart shows the ratio of cases of typhoid fever to the thousand of population, by wards, for 1890, 1891, and 1892, with the number of inhabitants to the acre in 1892, and the maximum and minimum elevation in feet above mean low water, in each ward. From this chart it will be seen that the disease was less prevalent in each ward of the city for the year 1892 than it was in 1891 or 1890, with the exception of Wards 11 and 17 in 1891 and Wards 7, 8, and 21 in 1890. The highest rate during the year was in Ward 6; the lowest was in Ward 10. By following the line indicating the maximum and minimum elevation in each ward it will be seen that there is no definite relation between the prevalence of the disease and the elevation above mean low water. A comparatively crowded condition of a ward does not seem to influence the frequency of the disease; for if Ward 16 with a population of 213 to the acre is compared with Ward 14 with a population of 54, it will be seen that the disease is no more prevalent in the former ward than it is in the latter. The accompanying map shows the ratio of cases of typhoid fever to the thousand of population in each ward for 1892. By reference to the color key it is evident that Wards 1, 10, 12, 15, and 18 have ratios below one to the thousand; that Wards 2, 3, 4, 5, 7, 8, 9, 11, 13, 14, 16, 19, 20, 21, 22, 23, 24, and 25 have ratios above one and below two, and that Wards 6 and 17 have a ratio of 2.46 and 2.30 respectively. The table on page 50 shows the class and the condition of the drainage of the houses in which typhoid fever occurred in 1892. In this table the houses are divided into four classes: excellent, good, fair, and poor. An inspection has been made of the condition of the water-closets, of the vaults, of the cesspools, of the drains, of the traps, of the soil-pipes, and of the cellars. No wells were found in houses where typhoid fever occurred during the year. An analysis of this table shows that in 15 houses of the excellent class, 15 cases of typhoid fever occurred, and that in only one instance was the drain found to be defective. In 96 houses of the good class where typhoid fever occurred, in 3 instances the water-closets were found to be defective; in 8 instances the cesspools were in a bad condition; the drains were found to be defective in 23 houses; traps were wanting in 8 cases; and the cellars were in a bad condition in 4 houses. In houses of the fair class 343 cases of typhoid fever occurred. The summary of the sanitary condition is as follows: defective water-closets, 25; offensive vaults, 6; cesspools in bad condition, 35; drains defective, 120; traps wanting, 71; soil-pipes unventilated, 149; and cellars in bad condition, 32. In houses of the poor class 180 cases of typhoid fever were found. Of these houses 32 had filthy water-closets; 21 had offensive vaults; in 7 the cesspools were foul; in 73 the drains were defective; in 50 the traps were not efficient; in 98 the soil-pipes were not properly ventilated; and in 51 the cellars were in bad condition.

Table showing the Class and the Condition of Drainage of the Houses in which Typhoid Fever occurred in 1892.

Condition.	Class.	Drainage, etc.						
		Water-closets.	Vaults.	Cesspools.	Drains.	Traps.	Soil-pipes.	Cellars.
Perfect	Excellent	15	. . .	4	14	15	15	15
	Good	93	. . .	22	73	88	87	81
	Fair	306	6	41	223	272	182	279
	Poor	120	7	12	107	129	54	106
Imperfect	Excellent	. . .	. . .	. . .	1			
	Good	3	. . .	8	23	8	9	4
	Fair	25	6	35	120	71	149	32
	Poor	32	21	7	73	50	98	51

RATIO OF CASES OF
TYPHOID FEVER
TO THE THOUSAND OF POPULATION, BY WARDS, FOR 1892.



Ratio below 1 per 1000 = ▭
" 1 to 2 " 1000 = ▭
" 2 " 3 " 1000 = ▭

DISINFECTION.

In cases where contagious diseases have been reported, disinfection of the houses or rooms where the disease existed has been performed without expense to the occupants. School-houses and other places where contagion was suspected have also received similar attention, as will be seen by the following table:

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Diphtheria	104	85	94	112	93	77	58	66	71	109	143	153	1,165
Scarlet fever	223	207	279	343	264	304	125	111	74	102	124	129	2,344
Typhoid fever	. .	1	. .	. .	. .	1	. .	. .	. .	. .	1	. .	3
Measles	. .	. .	.	. .	1	. .	. .	. .	. .	. .	. .	. .	1
Small-pox	. .	. .	. .	. .	. .	. .	. .	2	. .	. .	. .	. .	2
Puerperal fever	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	1
Phthisis	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Bronchitis	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1
Infected bedding and clothing (lots)	2	4	2	6	4	10	2	3	1	7	6	10	57
Infected carriages	1	. .	. .	1	2	. .	1	. .	. .	11	. .	5	21
Miscellaneous	. .	. .	. .	. .	. .	1	. .	. .	. .	1	. .	6	7
School-houses	3	2	. .	2	1	. .	. .	1	. .	. .	. .	1	10
Total	334	299	375	464	366	393	186	183	146	230	274	363	3,613
No. of rooms	684	560	748	944	772	901	404	378	284	414	588	686	7,363

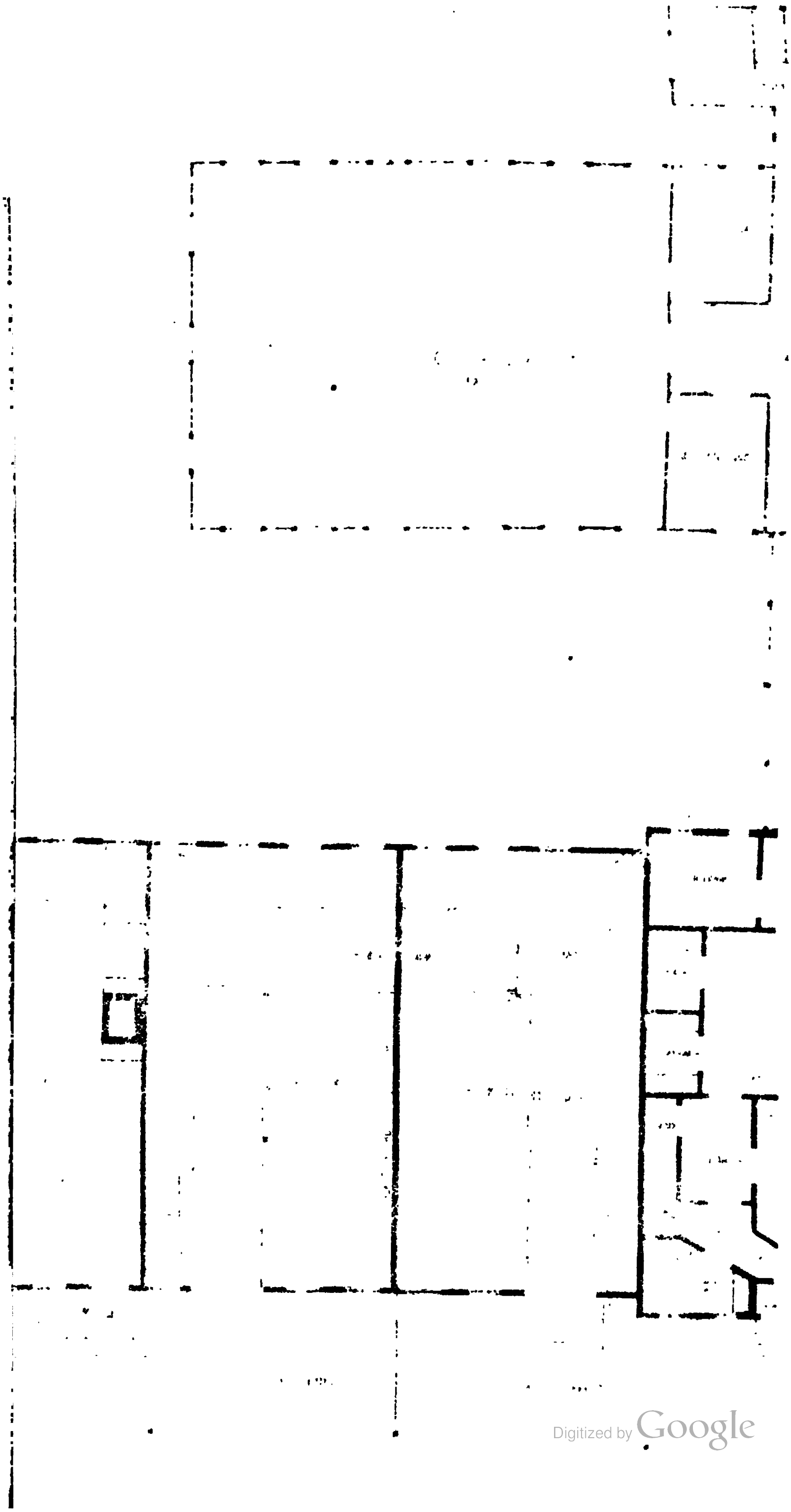
The following table shows the amount and kind of materials used as disinfectants, and the places where used:

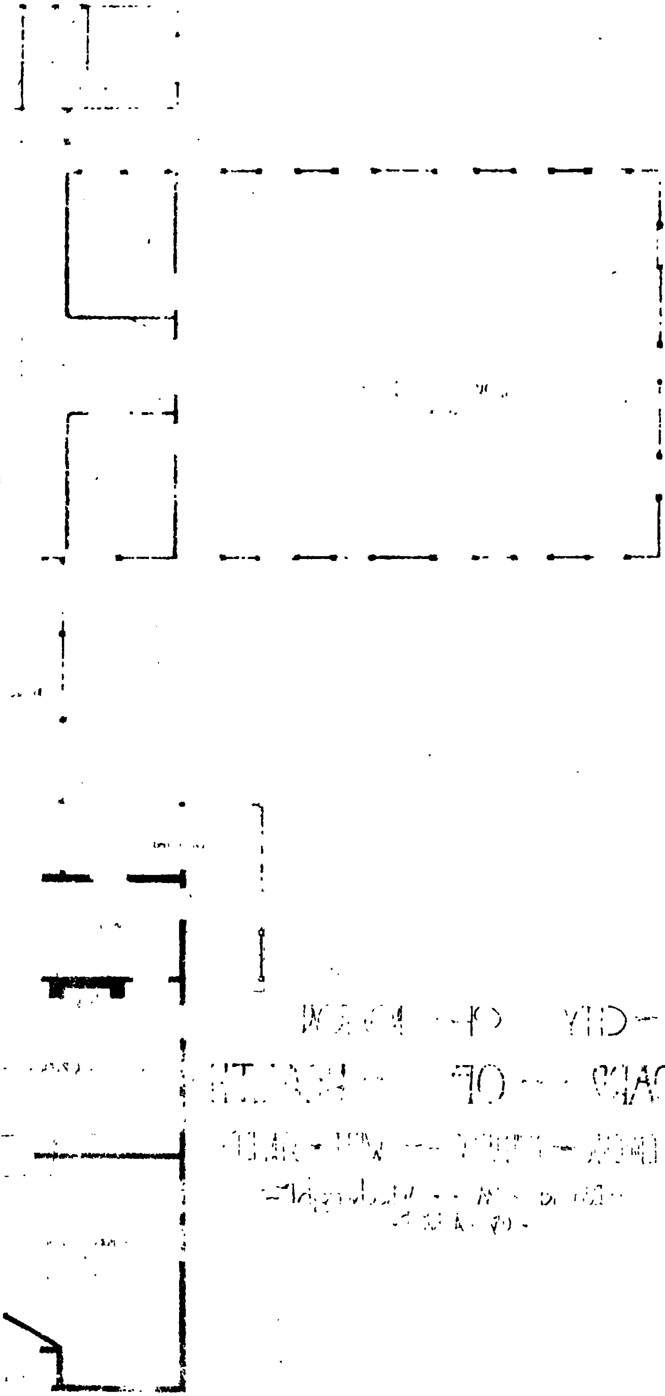
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Streets . . .	.	.	.	.	.	3	73	56	117	57	21	.	327
Places	.	.	.	.	.	14	57	80	161	155	30	.	497
Courts . . .	.	.	.	.	.	37	45	121	124	113	42	.	482
Alleys . . .	.	.	1	.	2	23	412	474	1,041	1,085	221	.	3,259
Yards	10	10	10	10	18	216	2,684	2,990	4,763	4,043	1,024	10	15,788
Vaults . . .	16	2	6	20	20	45	848	584	2,159	1,642	441	5	5,788
Cellars . . .	26	16	20	4	30	69	1,464	1,206	2,824	2,140	877	40	8,716
Cesspools . .	5	.	2	3	5	82	2,533	1,891	6,628	4,927	1,620	.	17,696
Gutters . . .	.	.	.	.	2	40	1,275	1,187	5,375	3,293	640	.	11,812
Water-closets	16	10	30	30	25	34	1,247	583	2,803	2,099	759	68	7,704
Passageways,	2	.	.	.	2	40	1,234	791	1,076	1,309	381	2	4,837
Urinals . . .	1	.	.	.	1	2	89	57	173	98	20	1	442
Vacant lots .	.	.	.	.	1	1	61	61	302	304	41	.	771
Filthy sheds .	4	6	3	.	10	48	522	678	1,787	1,472	289	40	4,859
Filthy and infected rooms,	220	248	260	340	300	480	230	244	252	316	279	248	3,417
Sinks	40	26	10	25	16	152	1,598	1,209	2,064	2,729	681	148	8,698
Total . . .	340	318	342	432	432	1,286	14,372	12,212	31,649	25,782	7,366	562	95,093

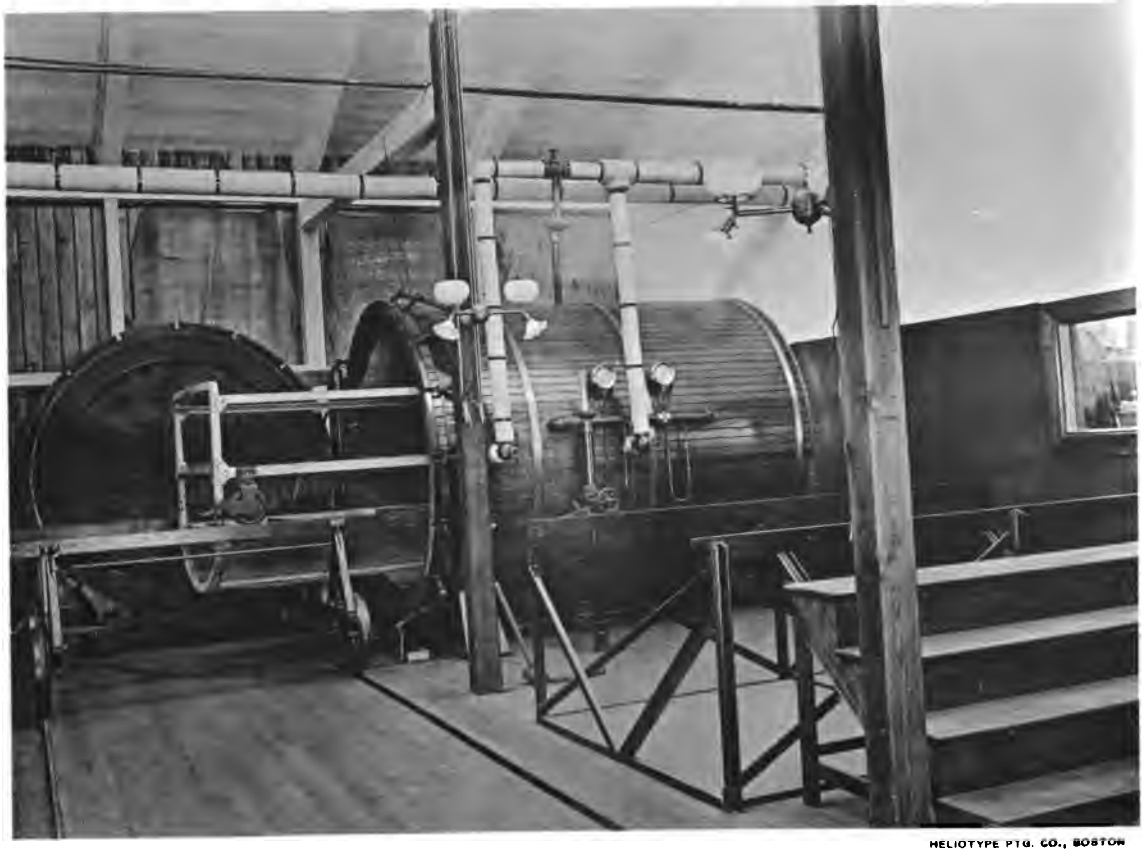
Material used, bichloride of mercury, 1,325 pounds; chloride of lime, 56 casks; sulphur, 35,967 pounds; copperas, 30 barrels; and 30 barrels of other disinfecting powder.

STEAM DISINFECTING STATION.

It has hitherto been the practice of this Department to disinfect all movable personal effects in houses where contagious diseases have occurred, the work being done on the premises by a disinfecting corps attached to this Department. During the past year a radical change has been made in the methods of performing this work by the establishment of a steam disinfecting station, to which all infected

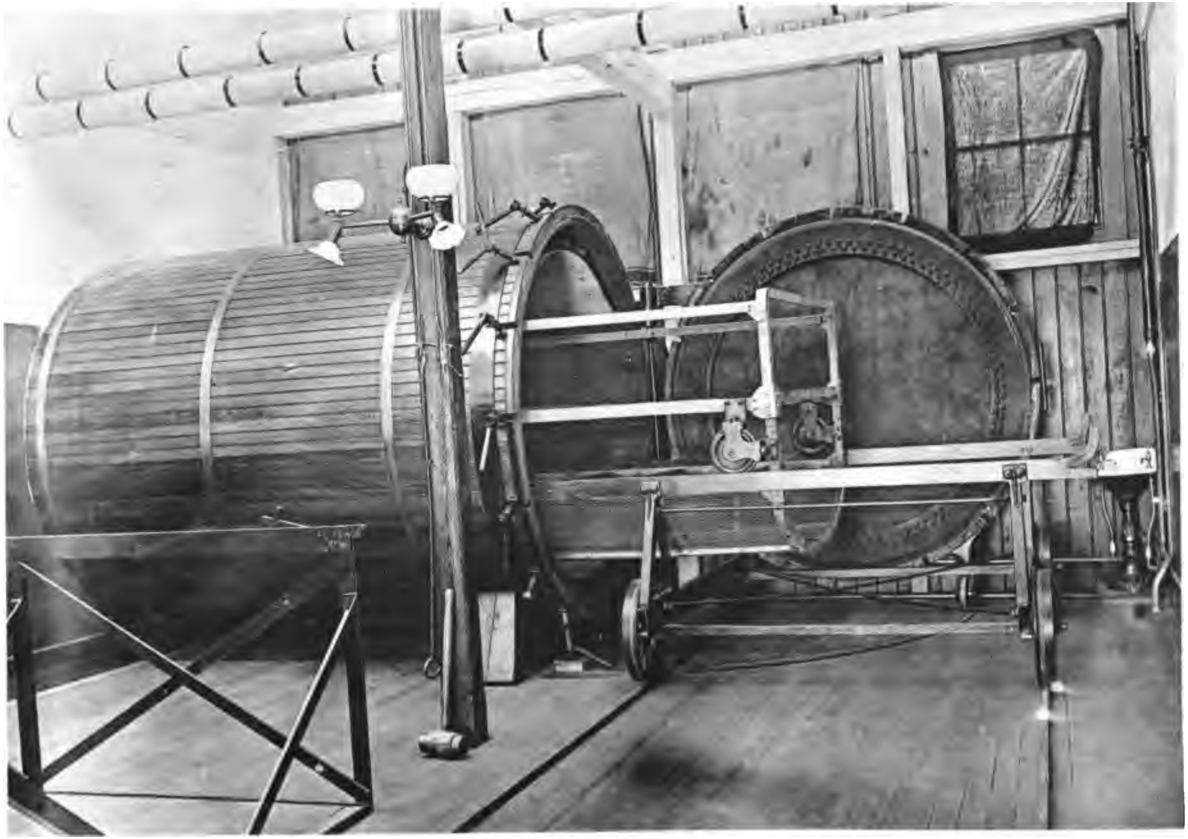






HELIOTYPE PTG. CO., BOSTON

DISINFECTING CYLINDER — Room where articles are received.



HELIOTYPE PTG. CO BOSTON.

DISINFECTING CYLINDER—Room where articles are discharged

articles are moved in especially contrived vans for disinfection by super-heated steam. The disinfecting plant is in a building adjoining, but entirely apart from, the cholera hospital on Swett street. Disinfection by steam under pressure is now recognized as the most reliable and effectual method; but the cost of the necessary apparatus has heretofore prevented its adoption in the city.

The apparatus for disinfection is an iron cylinder 20 feet long, 7 feet in diameter, with a capacity of about 692 cubic feet, fitted with the necessary steam-pipes, gauges, and valves. The outer shell is made of steel five-eighths of an inch thick; the inner shell is of galvanized iron one-eighth of an inch in thickness; a coil of perforated steam-pipes is placed at the top of the cylinder; the coil at the bottom is not perforated. The cars, in which the articles to be disinfected are placed, run on tracks into the cylinder, entering at one end and being removed at the other. There is no communication between the chamber where the disinfected articles are received and that from which the disinfected articles are removed. The boiler-house and disinfecting apparatus occupy about three-fourths of the building. The accompanying heliotypes give a very good idea of the interior construction of the disinfecting plant.

Two vans especially constructed for the purpose have been procured, — one for the conveyance of infected articles, the other for the conveyance of disinfected articles. These vans are air-tight, so that there can be no danger of contamination to the public by their passage through the street. They are also built so that after the removal of infected articles they can be thoroughly disinfected.

We show the ground plan of the disinfecting station, and also of the epidemic hospital herewith.

Particular attention is called to the fact that the hospital is entirely separate and distinct from the disinfecting station, so that there cannot be the slightest danger of infection from it.

On September 30 the city government by special act authorized the making of a loan of $50,000, and ordered the same placed to the credit of this Department for the extension and improvement of its quarantine facilities at Gallop's island, and also for the erection of a disinfecting station and providing improved hospital accommodations for contagious diseases in the city proper. The work, which is referred to in detail elsewhere, was at once entered upon, and is now for purposes of utility practically completed. There has up to the present time been expended out of the above amount, $45,280.99. The unexpended balance will be ample, in the opinion of the Board of Health, to absolutely perfect the work.

House-to-House Inspection.

The custom of making a house-to-house inspection of blocks of dwellings in different parts of the city, which was begun in 1877, has been continued (except in 1884, 1885, and 1886), with somewhat interesting results.

The number of houses examined under this method for the present report, is smaller than that for any previous year, on account of the unusual pressure of other work upon the inspectors; but the result of this inspection shows the same interesting features that have been developed in past years.

There has been a gradual change for the better in the sanitary condition of the houses and their appurtenances since 1877, as will be noted in the summary of these special examinations. The change in the health and building laws from time to time has aided somewhat in securing better plumbing and draining of dwellings, and the abolishment of privy-vaults and cesspools.

The destruction of vaults and substitution of water-closets, the ventilation of the house plumbing, and the addition of traps under the fixtures, have been marked features in the improvements noted. During the first five years of this special work, beginning 1877, the percentage of privy-vaults found to the whole number of houses examined, averaged 28+; the average for the whole 13 years was 14, and for the last year, 3.

Deficient trapping was found during the first five years to average 50+ per cent.; during the 13 years, 32+ per cent.; and during the last year it was 22+ per cent.

Defective conditions of the plumbing found in the first five years averaged 49+ per cent.; in the whole 13 years they averaged 39+ per cent.; in the last year they were found in 34+ per cent.

A striking feature in these examinations is the large number of offensive water-closets, a condition which might be considered unreasonable.

There are three reasons why the water-closet is so often found in bad condition:

It is frequently very badly located.
It is frequently very poorly constructed.
It is frequently very poorly cared for.

Placing water-closets in the cellar, under the stairs, in the dark halls, or wherever daylight and ventilation cannot well be secured is a mistake and ought to be prohibited.

Cheaply constructed and cramped water-closets in dark places are almost always neglected, misused, broken, and offensive.

Another striking feature seen as a result of these special examinations is the continued high percentage of cases in which defective house plumbing and drainage are found even by our simple yet practical method of testing. The percentage has been somewhat lowered, but, as all must acknowledge, it is still unreasonably high.

An average of 34+ per cent. has been found for the last five years, including old and new houses.

These examinations have shown poor construction and repairs in old houses, and faulty construction in new ones also.

The question of more stringent regulations for this work has often suggested itself. The Board of Health has no authority to order or dictate any special kind or quality of work. It can only insist that the leak shall be stopped for the time, and renew its order when the leak recurs.

Section 1.

Nine wooden and three brick houses, situated in Ward 6, about grade 25, in poor condition, occupied by a class of people in poor circumstances, numbering 217.

Number	of houses in the street	12
"	examined	12
"	in which bad odors were perceptible	8
"	in which defective drains were found	6
"	in which defective trapping was found	3
"	having privy-vault on premises	0
"	of such vaults found offensive	0
"	having damp or unclean yards	0
"	having damp or unclean cellars	3
"	using furnaces	1
"	furnaces without proper air-supply	0
"	having water-closets	12
"	having offensive water-closets	2
"	having ventilation to soil-pipe or drain	1
"	having offensive cesspools	0

Section 2.

Thirty-five brick and eighteen wooden houses, situated in Ward 7, about grade 25, in fair condition, occupied by a class of people in poor circumstances, numbering 498.

Number	of houses in the block	53
"	examined	53
"	in which bad odors were perceptible	32
"	in which defective drains were found	17
"	in which defective trapping was found	16
"	having privy-vault on premises	0
"	of such vaults found offensive	0
"	having damp or unclean yards	4
"	having damp or unclean cellars	10

Number using steam-heat	0
“ using furnaces	10
“ furnaces without proper air-supply . .	5
“ having water-closets	53
“ having offensive water-closets . . .	15
“ having ventilation to soil-pipe or drain .	34
“ having offensive cesspools	2

Section 3.

Twenty-six brick and two wooden houses, situated in Ward 10, about grade 95, in good condition, occupied by a class of people in good circumstances, numbering 324.

Number of houses in the street	28
“ examined	28
“ in which bad odors were perceptible . .	12
“ in which defective drains were found . .	11
“ in which defective trapping was found . .	6
“ having privy-vault on premises . . .	1
“ of such vaults found offensive . . .	0
“ having damp or unclean yards . . .	0
“ having damp or unclean cellars . . .	1
“ using steam-heat or hot water . . .	1
“ using furnaces	24
“ furnaces without proper air-supply . .	0
“ having water-closets	28
“ having offensive water-closets . . .	1
“ having ventilation to soil-pipe or drain .	16
“ having offensive cesspools	5

Section 4.

Thirty-two brick houses, situated in Ward 18, about grade 17, in good condition, occupied by a well-to-do class of people, numbering 170.

Number of houses in the street	33
“ examined	32
“ in which bad odors were perceptible . .	11

Number in which defective drains were found	7
“ in which defective trapping was found	2
“ having privy-vault on premises	0
“ of such vaults found offensive	0
“ having damp or unclean yards	2
“ having damp or unclean cellars	0
“ using furnaces	32
“ furnaces without proper air-supply	2
“ having water-closets	32
“ having offensive water-closets	1
“ having ventilation to soil-pipe or drain	21
“ having offensive cesspools	20

Section 5.

Thirty-nine brick houses, situated in Ward 11, about grade 18, in poor condition, occupied by a well-to-do class of people, numbering 450.

Number of houses in the street	39
“ examined	39
“ in which bad odors were perceptible	1
“ in which defective drains were found	15
“ in which defective trapping was found	0
“ having privy-vault on premises	0
“ of such vaults found offensive	0
“ having damp or unclean yards	2
“ having damp or unclean cellars	6
“ using steam-heat	33
“ using furnaces	6
“ furnaces without proper air-supply	0
“ having water-closets	39
“ having offensive water-closets	0
“ having ventilation to soil-pipe or drain	39
“ having offensive cesspools	0

Section 6.

Sixteen brick houses, situated in Ward 16, about grade 16, in fair condition, occupied by a class of people in fair circumstances, numbering 160.

Number of houses in the street	16
“ examined	16
“ in which bad odors were perceptible . .	12
“ in which defective drains were found . .	6
“ in which defective trapping was found . .	7
“ having privy-vault on premises . . .	0
“ of such vaults found offensive . . .	0
“ having damp or unclean yards . . .	1
“ having damp or unclean cellars . . .	1
“ using furnaces	9
“ furnaces without proper air-supply . .	0
“ having water-closets	16
“ having offensive water-closets . . .	4
“ having ventilation to soil-pipe or drain .	4
“ having offensive cesspools	8

Section 7.

Sixteen brick and one wooden house, situated in Ward 23, about grade 60, in good condition, occupied by a well-to-do class of people, numbering 122.

Number of houses in the street	17
“ examined	17
“ in which bad odors were perceptible . .	6
“ in which defective drains were found . .	3
“ in which defective trapping was found . .	2
“ having privy-vault on premises . . .	1
“ of such vaults found offensive . . .	1
“ having damp or unclean yards . . .	0
“ having damp or unclean cellars . . .	0
“ using steam-heat	3
“ using furnaces	14
“ furnaces without proper air-supply . .	0
“ having water-closets	17
“ having offensive water-closets . . .	0
“ having ventilation to soil-pipe or drain .	17
“ having offensive cesspools	1

Section 8.

Twenty-six wooden houses, situated in Ward 20, about grade 60, in poor condition, occupied by a class of people in fair circumstances, numbering 170.

Number of houses in the street	26
" examined	26
" in which bad odors were perceptible	14
" in which defective drains were found	12
" in which defective trapping was found	4
" having privy-vault on premises	2
" of such vaults found offensive	2
" having damp or unclean yards	2
" having damp or unclean cellars	2
" using steam-heat	1
" using furnaces	23
" furnaces without proper air-supply	2
" having water-closets	26
" having offensive water-closets	0
" having ventilation to soil-pipe or drain	19
" having offensive cesspools	2

Section 9.

Twenty-two wooden and six brick houses, situated in Ward 14, about grade 45, in good condition, occupied by a class of people in good circumstances, numbering 159.

Number of houses in the block	28
" examined	27
" in which bad odors were perceptible	7
" in which defective drains were found	4
" in which defective trapping was found	14
" having privy-vault on premises	3
" of such vaults found offensive	3
" having damp or unclean yards	0
" having damp or unclean cellars	1
" using steam-heat	0
" using furnaces	25

Number furnaces without proper air-supply	5
“ having water-closets	26
“ having offensive water-closets	0
“ having ventilation in soil-pipe or drain	13
“ having offensive cesspools	1

Section 10.

Twenty-five wooden houses, situated in Ward 1, about grade 80, in poor condition, occupied by a class of people in fair circumstances, numbering 169.

Number of houses in the block	25
“ examined	25
“ in which bad odors were perceptible	14
“ in which defective drains were found	14
“ in which defective trapping was found	9
“ having privy-vault on premises	1
“ of such vaults found offensive	1
“ having damp or unclean yards	0
“ having damp or unclean cellars	0
“ using steam-heat	1
“ using furnaces	1
“ furnaces without proper air-supply	0
“ having water-closets	24
“ having offensive water-closets	5
“ having ventilation to soil-pipe or drain	8
“ having offensive cesspools	0

Recapitulation.

Whole number examined	275
Bad odors found in	117
Defective drains found in	95
Defective trapping found in	63
Privy-vaults found	8
Offensive vaults found	7
Damp or unclean yards	11
Damp or unclean cellars	24
Using furnaces	145

Furnaces without proper air-supply	14
Using steam-heat	41
Water-closets found in	273
Offensive water-closets found in	28
Ventilation to soil-pipe or drain found in	172
Offensive cesspools found	39
Percentage of defective drains	34.54
Percentage of defective trapping	22.91
Percentage of unventilated drains	37.45

SCHOOL-HOUSES.

During the year ten new school buildings have been occupied for the first time; several old buildings have been abandoned, and several hired rooms used for overflows have been given up.

There are now 173 buildings belonging to the city used for day schools, and two for evening schools, and a few hired rooms besides. All of the school-houses have been inspected once each and some of them several times during the year.

Forty-seven sanitary defects were found, viz.:

Defective drains	16
Offensive urinals	8
Offensive vaults	3
Damp cellars	4
Cellars where rubbish was found	4
Vaults not properly flushed	3
Water-closets not properly flushed	2
Filthy privy seats	2
Obstructed set bowl	1
Odor from dead rat	1
Drain odor in cellar	1
Defective water-closets	1
Decaying wooden floor in cellar	1

The worse defects were where drains were buried in basements, as here defects may occur and exist for years without the usual tests indicating the fact, which can only be ascertained by uncovering the drain.

It would seem to be the part of wisdom that no more drains should be buried in the basements of buildings built in the future, but that the grade of such buildings should be such as to admit of all drains being above ground and in sight, where defects can at once be detected.

Bad odors often arise from the sanitary devices in the basements and find their way into the building with the upward currents of warm air. This can be avoided by placing the devices in a separate room of the basement, especially planned in all respects for the sole purpose, and having a draft from such room through a shaft to the top of the building and preventing any contamination of the air of the basement of the school-house.

In the construction of new buildings this plan can easily be carried out without much extra cost; to adopt it in the old ones would cost more, but we think it should be done.

We are fully convinced that the ordinary water-closet flush vault and urinal are not likely to be maintained in the basement of a school-house without incurring some risk to the comfort and health of the pupils and teachers in the building.

MEDICAL INSPECTION OF SCHOOLS.

The medical inspection of schools and of children returning to school after illness from contagious diseases will be postponed for another year, owing to our failure to obtain the necessary funds for the purpose.

The need for beginning this work is made more and more evident each year by the presence of children in the schoolroom whose continuance there is an injury to themselves and a source of danger to others. It is also to be noted that the health of the school children is continually endangered by returning convalescents from contagious diseases with unwarrantable certificates of recovery. We therefore hope that the time is not far distant when the Board will be able to secure the necessary appropriation for this important work.

HOUSES VACATED.

The number of houses ordered to be vacated for sanitary reasons during the year was 108, of which number about 10 per cent. were so worn out and badly located as to make their future use for habitation out of the question. Seventy-five of these houses were put in a habitable condition before the expiration of the time specified in the notice to vacate, and the order to vacate was not enforced. The remainder while actually vacant have since been put in such a sanitary condition that the Board has given permission for them to be reoccupied.

In many of the houses vacated unsanitary surroundings and immorality on the part of the occupants seemed to be twin evils, but while this Department has been able to cope with the former condition, it has been beyond its province to deal with the latter. Hence, when a house which has been vacated by this Department has been put in a satisfactory sanitary condition, the Board does not feel that it is warranted in withholding permission for its reoccupancy, even though it has a most unsavory reputation and the proposed occupants are of an immoral class.

A notable example of this condition of things occurred in the case of the premises at the West End known as "London Bridge," which was occupied by twenty-seven families, and which after having been vacated was thoroughly renovated and cleansed at considerable expense to the owner, who was granted permission to reoccupy, against the remonstrances of many good citizens, whose objections were founded on other than sanitary considerations.

Table showing the Number of Nuisances Abated.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
House-drains repaired .	132	155	175	260	230	196	160	178	361	259	176	169	2,451
Vaults cleaned and repaired	10	34	45	75	81	56	72	72	551	376	43	23	1,408
Traps supplied	46	85	56	97	71	58	45	45	175	242	133	80	1,183
Yards cleaned	27	52	53	221	85	82	46	91	299	81	32	26	1,095
Cellars cleaned	49	82	83	203	105	107	64	102	280	94	63	50	1,282
Cesspools cleaned . . .	11	13	18	55	38	33	33	30	93	53	17	11	405
Water-closets cleaned and repaired	93	101	113	142	104	79	50	88	208	114	66	87	1,245
Number of places from which fowls were removed	1	2	2	11	12	7	9	8	16	11	1	1	81
Supply-pipes repaired .	8	8	3	13	8	5	7	8	10	5	1	2	78
Privies cleaned and repaired	.	4	6	1	9	4	8	1	21	2	.	1	57
General want of cleanliness and repairs . . .	13	52	27	31	21	16	9	16	54	15	11	15	280
Exposed manure	2	1	5	10	12	7	2	7	21	7	1	.	75
Passageways cleaned . .	2	11	8	64	16	31	16	45	78	15	5	11	302
Sheds cleaned	1	3	3	11	5	11	6	12	28	10	1	2	93
Tenements whitewashed,	6	13	17	1,708	1,030	531	57	7	4	4	.	3	3,380
Stables cleaned	2	1	3	3	12	5	6	10	36	20	3	.	101
Sundry nuisances	6	1	3	6	4	8	12	8	23	10	3	5	89
Rain conductors repaired,	1	7	3	2	2	7	8	4	10	5	5	5	59
Roofs repaired	.	4	1	6	9	6	4	4	5	2	3	1	45
Receptacles provided for garbage	3	11	3	21	5	6	5	11	14	1	.	3	83
Places from which swine were removed	.	2	1	2	2	2	3	2	10	7	.	.	31
Stagnant water removed from vacant lots . . .	2	.	4	13	13	8	11	19	67	13	9	1	160
Vacant lots cleaned . . .	1	.	.	11	5	3	7	13	56	6	.	2	104
Houses cleaned of dead rats	1	2	1	2	2	. . .	.	.	. . .	1	.	.	9
Overcrowded rooms . .	.	5	6	4	2	1	1	.	1	. . .	1	.	21
Places from which goats were removed	.	.	.	2	1	. . .	2	1	4	2	.	.	12
Total	417	649	639	2,974	1,884	1,269	643	782	2,395	1,355	574	498	14,079

In addition to the foregoing there have been 1,064 complaints investigated, where action by the Board was found to be unnecessary.

Removal of Privy-Vaults.

The abolition of privy-vaults in streets supplied with sewers has been continued. The number abolished during the year is 872, as will be seen by reference to the following table:

	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	Total.
Ward 1. . .	19	97	70	48	24	30	33	31	352
" 2. . .	79	96	90	92	41	57	28	47	530
" 3. . .	31	83	54	38	14	22	11	36	289
" 4. . .	48	56	53	25	53	26	40	75	376
" 5. . .	26	55	46	30	25	20	6	31	239
" 6. . .	22	19	43	27	50	80	33	95	369
" 7. . .	10	52	50	23	49	74	21	33	312
" 8. . .	60	170	104	37	15	5	9	7	407
" 9. . .	40	77	41	26	11	14	7	12	228
" 10. . .	9	18	5	1	2	3	1	2	41
" 11. . .	6	16	1	1	1	3	6	11	45
" 12. . .	40	56	18	4	16	10	5	8	157
" 13. . .	61	164	87	83	78	95	13	63	644
" 14. . .	29	99	71	49	28	26	18	40	360
" 15. . .	79	65	16	16	19	20	17	35	267
" 16. . .	28	42	27	14	39	13	19	31	213
" 17. . .	18	62	5	3	8	1	10	18	125
" 18. . .	3	4	10	6	6	1	39	7	76
" 19. . .	40	48	28	37	40	25	27	2	247
" 20. . .	56	77	19	48	15	39	25	30	309
" 21. . .	14	37	31	17	7	16	13	17	152
" 22. .	21	65	60	24	24	30	34	4	262
" 23. . .	2	29	40	15	20	62	21	61	250
" 24. . .	43	68	70	83	68	54	33	114	533
" 25. . .	. . . .	. . . .	17	13	53	19	19	62	183
	784	1,555	1,056	760	706	745	488	872	6,966

Total since the passage of the act 6,966

VAULTS AND CESSPOOLS CLEANED DURING 1892.

Charlestown	181	Boston proper	287
So. Boston	175	Dorchester	500
W. Rox. & Brighton,	398	East Boston	140
Roxbury	272		
Total			1,953

REMOVAL OF NIGHTSOIL.

The Board has made a three-years contract with J. A. Rand, of Brockton, for the removal of nightsoil, at $4.90 per load of eighty cubic feet.

Prior to 1875 the price was $5 per load from November to May, and $6 per load from May to November. From 1875 to 1884 the price was $6 in winter and $7 in summer. From 1884 to 1887 the price was reduced to $5 per load during the entire year. From 1887 to 1890 the price was increased to $5.90 per load, and in 1890 it was still further increased to $6. This contract expired December 31, 1892, and the new contract, which is for the three years ending January 1, 1896, the price has been reduced to $4.90 per load.

The following is a copy of the contract:

This agreement, made this 6th day of February, A.D. 1893, between the City of Boston, first party, and J. A. Rand, second party, witnesseth:

1. That the said J. A. Rand shall have and exercise the exclusive right and privilege, during the term of three years from January 1, 1893, of taking and removing the contents, which are to be removed, of all vaults, privies, and cesspools used as receptacles for nightsoil in said city, and, for said work, shall furnish and employ such odorless apparatus, and such wagons, tanks, and barrels, as shall be satisfactory to the board of health of said city; said wagons to contain not less than eighty cubic feet each, as first measured and sealed by some sealer of said city; and said J. A. Rand shall not sell or assign his said privilege, nor any right or interest under this agreement, without the consent in writing of said board of health.

2. Said city shall, at its own expense, receive all applications for removing said contents, and, by notice signed by the clerk of said board of health, notify said J. A. Rand thereof.

3. Said J. A. Rand shall, every day except Sundays, during said term, send a person to the office of said board of health to receive the notices aforesaid, and shall, at the same time, report the number of cubic feet of such contents removed under each application during the preceding twenty-four hours.

4. Said J. A. Rand shall promptly, neatly, and thoroughly remove all such contents as he shall be notified of as aforesaid, by said odorless apparatus wherever practicable, and to the satisfaction of said board of health, within a reasonable time, and within forty-eight hours after receiving said notice, if so directed in the notice, and in accordance with the ordinances of said city relating thereto, which are now, or hereafter during said time may be, in force; *provided, however*, that the rate of compensation herein specified shall not be altered or affected by any ordinance of said city hereafter passed during said term. When the said board of health, on complaint of a person charged for such work, causes the same to be measured, and it measures less than as reported by said J. A. Rand, he shall pay the cost of such measurement, and shall complete the work charged for.

5. The said J. A. Rand may demand and receive from applicants, or from any other person legally liable for said work, "and may require the same to be paid in advance, or deposited with said board of health," the sum of four dollars and ninety cents for each and every load of eighty cubic feet or fractional part of the contents of such vaults or cesspools removed by him; *provided*, that said vault or cesspool shall be thoroughly emptied by said J. A. Rand; but said city shall not be liable for any payment for such work unless done on premises owned or leased by it.

6. Said J. A. Rand shall not bring any such wagon, tank, or barrel, unless it be air-tight and odorless, within the limits of said city before ten o'clock in the evening, or keep the same within said limits later than until one hour before sunrise; shall not empty any of the contents thereof into any dock or stream in said city; shall, at his own expense, furnish and apply to every vault, privy, and cesspool cleaned by him as aforesaid, deodorizing material of such kind and in such quantity as said board of health shall require; shall leave said vaults, privies, and cesspools covered and clean; shall not drop or leave any of the contents thereof on the premises about the same, nor in any street or way of said city; and shall reimburse said city for all damages and expenses it may suffer or incur by reason of such leavings or droppings, or the removal thereof.

7. The City of Boston may cancel this agreement in case of failure on the part of said J. A. Rand to perform all his said agreements to the satisfaction of said board of health.

Analyses of Well-Waters. Figures express parts per 100,000 of water.

LOCATION.	Date of Analyses.	Whence taken.	AMMONIA.		Chlorine.	RESIDUE.			Hardness.	Transparency.	Color.	Odor.	Characteristics on ignition.	Nitrates.	REMARKS.
			Free.	Albuminoid.		Fixed.	Volatile.	Total.							
Dudley ave., Ward 23	Nov. 24	Well.	0.0016	0.0165	2.65	12.30	1.20	13.50	7	Clear.	None.	None.	Slight blackening.	Absent.	Not recommended for household use.
Pope st., E. Boston .	June 3	"	0.0028	0.0078	10.10	58.20	36.00	94.20	19	"	"	"	"	Trace.	Unfit for domestic use.
66 Cottage st., Ward 20	Sept. 29	"	0.0044	0.0078	1.45	11.10	5.50	16.60	3°	"	"	"	"	0.080	No evidence of injurious contamination at present.

TENEMENT AND LODGING HOUSES.

There are in the city a large number of what are technically called lodging-houses, as the term includes hotels and all places where persons are temporarily furnished with sleeping accommodations. Of these, however, there are only about fifty which require the constant supervision of this Department as regards cleanliness, ventilation, and overcrowding. These houses each accommodate from twenty to two hundred lodgers nightly, at prices ranging from ten to fifty cents, according to the accommodations furnished, and in some of the poorer classes this price includes a cup of coffee in the morning, provided the lodger arises at a suitable hour. For the sum of ten cents the lodger is provided with either a bunk or a cot bed in a large dormitory where from ten to seventy other persons are lodged, according to the size of the room. The number of persons who may be lodged in these rooms is limited by this Department, and a card giving the maximum number allowed is conspicuously posted in each room. There is no arbitrary rule as regards the space required for each lodger, and although four hundred cubic feet of air space has generally been taken as a minimum, light and ventilation are the most important factors in determining the number of lodgers allowed, as the buildings used for this class of lodging-houses were not designed for such use, and in the remodelling more attention has been given to economizing space than to furnishing sanitary accommodations. In warm weather the patrons of many of the cheap lodging-houses are comparatively few, but during the winter season the demand for cheap beds frequently exceeds the supply, and in consequence proprietors are tempted to overcrowd their premises and neglect proper sanitary precautions. During the present winter the officers of this Department have been required to give more attention to these houses than heretofore. Frequent visits have been made by day and by night, strict cleanliness has been insisted upon, and whitewashing required where needed. The disinfection of buildings and bedding in many cases has been compelled, and in some cases bedding has been destroyed as unfit for use. In all cases where more than the number of lodgers allowed by the Board has been found, proprietors have been required to make the necessary reduction. The inspection of tenement-houses has this year required much more time than usual for various reasons, among which may be mentioned the long-continued and severe cold weather, which in many cases froze the water supply and rendered the task of keeping these houses clean exceedingly difficult. Another difficulty has been the ever-increasing number of immigrants, whose manner of living is quite different from that which prevails among our older residents, and whose ideas of cleanliness are exceedingly crude. The fact that most of these people are a foreign-speaking class makes the oversight of their habitations more arduous, and in many localities requires a daily visit from the officers of the Department. With the advent of cold weather the health officers were as usual required to make visits at night to many of the poorer class of tenement-houses, to ascertain the number of occupants, and where the occupants were too numerous, to cause them to remove. Rooms have been placarded with notices specifying the maximum number of occupants allowed, and this placarding has been frequently repeated because of the ignorance or malice of the occupants in removing or defacing these notices.

CHARLES RIVER POLLUTION.

The pollution of the Charles river by the discharge therein of private drains and of public sewers within the limits of the city has received the attention of the Department during the year with a view to correcting the unsanitary conditions existing along the river banks and in the waters thereof. An inspection of all premises bordering upon the river revealed the following sources of nuisance in the shape of private drains and public sewers discharging sewage or other offensive matter from dwelling-houses, factories, and stables:

No. 232 Cambridge street; Eye and Ear Infirmary, Charles street; Nos. 142 and 144 Charles street; Nos. 11 and 31 Brimmer street.

All of the houses and stables on the northerly side of Beacon street, from No. 97 to No. 416 inclusive (133 houses and 39 stables).

No. 2 Rawley street; foot of Rawley street, near rear 45 Bay State road; Gate House, Essex-st. bridge; Commonwealth Extension Lumber Yard; junction Commonwealth avenue and Beacon street; Crescent Boat Club, Commonwealth avenue; Commonwealth avenue, opposite Essex street; Commonwealth avenue, near Cottage Farm Station, 4 houses and factory; Commonwealth-avenue extension, roundhouse; Commonwealth-avenue extension, signal tower; Faneuil Station, common sewer; North Beacon street, first right from Parsons street; Boston Fresh Tripe Company, Abattoir Grounds; Abattoir Buildings, Nos. 14, 111, 113, 115, 117, 160, 162, 219, 271, 273, 275, 277, 283, 287, 291, 301, 303, 305, 371, 373, 385, 411–57, 459–89, 495, 501, and 503 Western avenue; Upton court, glue factory; Upton court, first right, second right; Grant street, first left, second left, third left; Grant street, 3 houses on right; 1, 3, 5, 7, and 9, and 2 Smith street; 1, 3, and 5 Duck lane; corner Smith street and Western avenue (37 tenements); Smith street, last but one on right; Cambridge street near bridge; Cambridge street, opposite Beacon park; Cambridge street, opposite Beacon park, Palmer's stable; Cambridge street, opposite Beacon park, Knap's carriage factory; Cambridge street, opposite Beacon park, Jacque's planing mill; North Harvard street, Sarsfield estate; 145, 147, and 153 North Harvard street; North Harvard street, first left from Western avenue; North Harvard street, second left; Malvern street, trunk sewer.

The following premises on Tremont street drain into a brook, and thence into the river: first, second, third, fourth, fifth, sixth, seventh left, from Oak square, and last two houses on left from Oak square. The drainage from houses on Nonantum street also enter this brook.

The owners of these several premises were notified to discontinue draining into the river, and to connect with public sewers, where such sewers existed. Where there were no such sewers they were directed to provide cesspools or other means of caring for their drainage, in order to take it out of the river. In cases where the city was the offender, by reason of the discharge of public sewers, the Superintendent of Streets was requested to provide other means of drainage, and the work of connecting these sewers with the main drainage system has been vigorously prosecuted by the sewer department. In the cases of the 133 houses and 39 stables on the northerly side of Beacon street, from No. 97 to No. 416, inclusive, the owners of these estates were given a hearing on June 28, to show causes why they should not provide an intercepting sewer for their several drains. At this hearing the owners appeared and stated their objections to the plan proposed. A large majority of them preferred to continue the present system of drainage, but as this Department had determined that this system could not be allowed to continue, the question which they were asked to consider was as to the best means of diverting the sewage from the river and connecting their drains with the public sewer. As a large number of the owners of the estates were out of town and could not be communicated with at that time, an adjournment was granted until November 1, when the same parties again appeared before the Board and were given another hearing, at which His Honor the Mayor and the Superintendent of Streets were present, and stated their views as to the proper course to be pursued. Following are the Mayor's remarks:

"MR. CHAIRMAN, there seems to be considerable misapprehension as to the law in this case, and as to what it is proposed to do, either by the Board of Health or by the Executive Department of the city of Boston. There are two ways of getting sewers built in Boston. One is by the individual house owners upon compulsion by the Board of Health for maintaining a nuisance. That is one way.

Upon that it is customary to give a hearing. The action of the Board of Health is, in my opinion, final and beyond appeal, and there is nothing for the householders to do but obey the order of the Board. If that is obeyed, they can take the matter into the courts of law and settle it there. That method of procedure was begun by the Board of Health last summer; but at the instance of the property owners it was delayed from time to time. When the cholera excitement came on it became perfectly obvious that something must be done, not only to abate this particular nuisance, but all nuisances along this river and all the rivers that flow through Boston. The attack upon those nuisances was conducted systematically along the Neponset, the Mystic, and Charles. Although a large part of the contaminating matter does not come from Boston, but from adjoining cities and towns, it would not do for the city of Boston to rest upon its oars and wait until these cities have abated their portions of pollutions before we abated ours. We have already proceeded to abate the sewage nuisances that flow into the Charles river from Brighton. We are going down the river now towards Beacon street. The Board of Health, as I understand it, desired to confer with the owners of property along the water-side of Beacon street, as to the best practical method of abating this particular nuisance, it being a rather serious undertaking; and that was the only purpose of one or two continued hearings, as I understand it, and also of this one.

"I want, however, to call the attention of the Board and everybody present, that this is not the only way of getting a sewer in Boston. There is another way, and that is by the act of the city of Boston. The city of Boston has a right to build sewers; the city of Boston has the right to build a sewer in this particular locality, and it is going to do it. We have the right to make the private passageway in the rear of these houses a public way. We shall proceed in that way if necessary, not unmindful of the law, and make these streets a public highway, and then construct the sewer under the general laws. That is what we can do, and that is what we shall do, if necessary, wholly regardless of the action of the Board of Health, and regardless of any protest from any one in this community who thinks it is healthier to drain into an open river than it is to drain into a common sewer. The only question is, how to do it. The city of Boston wants this done, and I am here as the representative of the Executive Department, not of the Board of Health, to confer with the property owners there as to the best practical way of doing this thing. I have had the City Engineer make most careful estimates of three several plans, the only three that occurred to him. One was to build a sewer in this private way, which would be made a public way; the other was the drain under the sidewalks; and the other was to connect with the main sewer now in the middle of Beacon street. Of those three methods the one which would be the least expense to the property owners would be the first, that is, building a sewer in this 30-foot street; but before adopting that course, we wanted to lay these three propositions before you, gentlemen, representing the owners there, to see if you preferred one to the other two, and then the city perhaps would consider that position. It would cost the city less to connect under the sidewalks, but the cost to the abutters would be very considerably more, very much more, four or five times as much, and it would make a good deal of disturbance in Beacon street. I think, on the whole, if there is no objection, or if the abutters do not prefer some other course, we shall probably build that sewer in the 30-foot passageway, having first made it a public way, proceeding under the General Statutes, and wholly regardless of the action of the Board of Health.

"I would suggest, at this point, that another scheme has been spoken of, and that is, the desirability or possibility of building a small embankment in the rear of these houses at the expense of the owners. It has been proposed for a great many years to build a great embankment, a great boulevard, and there has been talk of putting in another row of houses. I speak as an abutter now. We do not own the fee in those flats. We have no riparian rights, no navigation rights, but the land is owned by the Commonwealth. The State can, with the consent of the War Department, authorize the erection of an embankment, and also make it sufficiently large to put in another row of houses. They are not likely to do it, but there is always that possibility staring us in the face. When the embankment was first proposed, some fifteen or twenty years ago, a plan was prepared by the then Board of Park Commissioners, of which Mr. Charles H. Dalton was a member, and it showed an embankment 100 yards wide. It would materially affect our view across the water, and would cost the city a great deal of money. It was also objected to by the War Department as diminishing the area of flats; but the present plan proposes to build a narrow embankment, there adding 70 feet to the 30 feet of private way that now exists in the rear of our houses, making a 100-foot embankment, not large enough for a park, but large enough for a driveway and bridle-path, and a sidewalk and esplanade along the river. The advantage of that in connection with the draining of these houses would be that the sewer could be built in that embankment to connect with the particular drains along the river front without disturbing any of the plumbing arrangements in the houses, and without ripping up that 30-foot private way.

"The advantage to the householders would consist in this. It seems to me that the future of Beacon street is very uncertain, as a street for residential purposes. The restrictions, I think down as far as Dartmouth street, run out in eight years. The 20-feet restrictions where I live do not run out until 1933, but in the upper part of the street the restrictions run out in 1900, and many of them in 1910, and so on; and when that time comes somebody is going to build out, unless every owner on both sides of Beacon street consents to an extension of those restrictions. I believe, also, that inside of the period of eight years there will be electric lines on Beacon street. Just as soon as the population of Brighton gets sufficiently large to make itself felt, there will be a demand that no municipal government can resist for running electric cars up and down Beacon street. When those two conditions are brought about, — and I look to see them realized in about eight years, — when the tracks are built through the streets, and there are two lines of electric cars running up and down there all day and night, Beacon street is going to be a very different street from what it is now. It seems to me that in view of that certain event, it is for our pecuniary interest there as property owners to protect ourselves by a narrow embankment in the rear, making a new front to our estates, and making a road for carriages behind. I have had estimates made of the cost by the Street Department and by the Park Department, and they are in substance this, that if we build a sea-wall like that which is being now erected by the Charles River Improvement Company on the other side of the river, the entire improvement can be built and finished for about fifty dollars a running foot, or about one thousand two hundred and fifty dollars for a twenty-five foot house-lot. If such a wall should be erected, as the city is building on the Charlesbank, the cost would be very much more. Now, it has been suggested by a number of persons owning property on the water-side of Beacon street, that it was for their pecuniary advantage to offer to pay the sum of fifty dollars a running foot for this embankment. The wall of the Charles River Improvement Company is good enough, it seems to me; but if anybody wants an ornamental wall, such as they have on the park in Ward 9 and Ward 8, why, it is a thing that, it seems to me, the city should pay for. The cost to each owner would be one thousand two hundred and fifty dollars for an estate the size of the one I live on. Personally, I consider it would improve my property at least five thousand dollars, and I should be very glad to contribute my proportionate expense. I am interested in four or five other estates on Beacon street, and every person who has been consulted about this matter, owning property on the water-side of Beacon street, has, after looking into it, expressed the same opinion. There has been no attempt made to canvass them. It has been simply the subject of casual conversation from time to time. I think everybody in my block would agree, and it seems to me so plainly for the interest of the property owners there that I should be very glad to see a movement started there in favor of our proposing to the city to build this embankment at our own expense.

"There are obstacles in the way, of course. You would have to get an act of the Legislature; you would have to get the consent of the Harbor and Land Commissioners; you would have to get the consent of the War Department at Washington; and the actual work, I suppose, would have to be done by the Street Department of the city government, and paid for by assessments in some way. The main obstacle would be the attitude of the War Department; but I am inclined to think that if the abutters were all prepared to take this matter up, those various obstacles could be overcome; and as some such plan as this could be devised and carried through early this winter, I think we might let the matter of the sewer rest until it could be built in connection with the embankment; but if no such plan as this is to be carried out, it seems to me there is nothing for the city to do but to go ahead and build a sewer in the rear of these houses or under the sidewalks."

Criticisms and suggestions were subsequently offered by the owners of the estates, and the whole subject was left for the parties interested to consider, with the understanding that one or another of the plans proposed would be required to be adopted.

It is the purpose of the Board of Health to require that all the private drains from the residences in question be diverted early in the coming season, and it is probable that the putting of an intercepted sewer in the passageway in the rear of these houses will be the method adopted.

In the cases of the other estates draining into this river, it is expected that other means of drainage will be provided at an early day, so that practically all these sources of pollution within the limits of the city of Boston, above the

West Boston bridge, will have been removed before the coming summer.

The principal sources of nuisance in the Charles, which are located in the cities and towns on the opposite bank of the river, cannot be removed until the completion of the Metropolitan sewer, now in course of construction, and which ought to be completed at the earliest possible time. Meanwhile, the authorities of these cities and towns are endeavoring to procure such legislation as will enable them to take possession of the river banks for park purposes, and for securing the river against further pollution, a scheme which has the cordial approval of this Department.

STONY BROOK.

The condition of Stony brook, on account of pollution by sewage, has also received the attention of the Department during the year, and all places where drains discharge, directly or indirectly, into this brook have been investigated, with the view of diverting the sewage elsewhere. Following is a list of the dwelling-houses, factories, and stables that drain into this brook:

Neponset avenue, 1st right from the brook; Ashland street, 1st right from Canterbury street, filtering cesspool; Clement avenue, 2d right from Farrington street, filtering cesspool.

In addition, there are a number of houses along the brook that drain to cesspools, and when these overflow sewage from them finds its way to the brook. These are as follows:

Stony Brook street, 1st right from Williams street; Stony Brook street, 1st left from New Keyes street; Rockland Brewery, Amory street; Boylston Brewery, Brookside avenue; leakage from stable, 90 Brookside avenue; B. F. Sturtevant, Blower Works, from urinal, stable, in which there are 17 horses, and room where castings are washed; Williams, 1st and 2d left from Washington street; Williams street, 1st right from Washington street; Silk Dye House, 194, 196, 198 New Keyes street; New Keyes street, 1st right from Washington street; Boston Thread and Twine Company, Burnett street, waste from dye-house and urinal;

3771 Washington street, filtering cesspool; 3779 Washington street, filtering cesspool; Stony Brook place, 1st and 2d left; 3d left, cow stable; 1st and 2d right, cow stable; 3d right, cow stable; 4th right, cow stable; 139 Pynchon street, drainage from urinal of the Highland Foundry; six houses in Culvert place; rear 87 Pynchon street, A. Zeigler's Silk Manufactory, and two houses; 9, 11, 59 Pynchon street, livery stable; 29 Elmwood street; 94, 98 Linden Park street; 42 Summer street, and 6 houses in the rear; 10 Simmons street; 144, 146, and 148 Vernon street; 8, 10, 14 Lamont street; 1 Siegel court, from 8 Lamont street; 3, 4, 5, and 6 Siegel court; 141 Vernon street; 10, 13, 15, 16, 17, 18, 19, 21 Downing street; 13 Cabot street, engine-house and stable; 22 Culvert street, machine shop; Culvert street, 1st right from Tremont street; Culvert street, 1st left from Tremont street; machine shop; 1177, 1179 Tremont street, and 30, 33 Culvert street; 35, 37, and 39 Culvert street; oppposite 39 Culvert street; south-east corner Culvert and Carey streets, machine shop; Rogers avenue, 1st and 2d right from Carey street, repair shop of the Old Colony R.R.; 1 Rogers avenue; 1½ Rogers avenue; 2, 3, 5, 6, 7, 11 Rogers avenue; 1, 2, 3, and 4 Rogers court, from Rogers avenue; 1 and 2 Bay View place, from Rogers avenue; 4 Bay View place; rear 4 Bay View place; 5, 7, 8, 9, 11 Bay View place; 15 1st and 15 2d Rogers avenue; 15 3d Rogers avenue; 16, 17, 69, 78, and 80 Rogers avenue.

In a large number of instances above enumerated there is no other method of drainage practicable than the one now existing. It is hoped, however, that sewers will be provided by the city, with which the several estates complained of in this vicinity can connect, in order that the pollution of the brook may cease.

WET LANDS.

An unusually large number of complaints were made during the year concerning the wet lands in the vicinity of the Back Bay fens. The tracts of land complained of were covered with offensive stagnant water and mud, and were at so low a grade that it was impracticable, in most cases, to drain them.

The owners of the several tracts complained of were notified to abate the nuisances existing on their premises, and one owner was made a defendant in a criminal suit for maintaining a nuisance on his premises. The litigation resulting from this complaint was so long that it was deemed expedient by the Department to avail itself of the provisions of the statute, which empowers the Board of Health to abate all nuisances of this character, paying the expense thereof with a special appropriation granted for the purpose, and to be subsequently collected from the owners of property benefited. Acting under this statute, the Board proceeded to fill the several lots complained of, and 29,616 loads of clean earth were deposited upon the vacant lots, and the nuisances were practically abated for the time being. In cases where it was found practicable, the water was drained off into the sewer through drains constructed for that special purpose.

The following estates were benefited by this work, and the bills for the same have been sent to the City Collector for collection:

Land of Francis J. Ward	$94 00
" " Sarah C. Hatch	595 50
" " Sewall Day Cordage Co.	1,665 50
" " James Stevenson	4,081 75
" " Lewis Coleman *et al.*, trustees . .	968 00
Total expenses assessed	$7,404 75

There is still left a very large number of stagnant pools of water and of pieces of wet land in different parts of the city which ought to be filled up at once to a proper grade and kept dry. Some of these are already causing sensible odors and all of them are threatening nuisances in the immediate future.

The presence of these unsightly and semi-dangerous spots are not only a standing menace to the health of the residents about them, but they seriously impede or delay the development and use of adjoining lands, to the great disadvantage of the city and to individual property owners, so that there is not only the public health to be considered, but a financial and economic value in raising such lands to a proper grade and keeping them dry.

ABATTOIR.

The work of inspecting live animals and dressed meat at the Brighton Abattoir during the past season has not been attended by any unusual circumstance, except the fact that there has been an unusual increase in the number of cases of actinomicosis among the animals brought for slaughter. This has occurred, undoubtedly, from the fact that in many of the Western cities where large numbers of cattle are slaughtered, animals affected with this trouble are ruled out as unfit for food. It has been our custom here to regard this affection as having only a local influence upon the meat of the animal during its early history, and to condemn only the part affected so long as it remained purely local and the animal was otherwise in good condition.

Investigations are now going on with a view to determine whether or not the meat of such an animal should be regarded as unfit for human food. At present, however, we know of no facts by which we should be warranted in a general condemnation of such meat.

The Act of the Legislature of 1892 requiring an examination of all animals, at the railroad yards, intended for exportation, together with the examination of all milch cows within the city as required by the new regulations of this Board, has made it necessary to appoint an additional inspector to assist Dr. Burr in the work.

DAIRIES AND COW STABLES.

Knowing the dangers to which our milk supply is exposed by careless methods of production and handling, and knowing that many of the so-called stables within the limits of our city were unfit for the purposes for which they were used, this Board made and published the following regulations in April, 1892:

Regulation.

Whereas cows' milk is one of the most common and necessary articles of food, and is oftentimes seriously impaired in usefulness and rendered dangerous to health by the want of proper care in its production or subsequent treatment or handling, it is therefore

Ordered, That the following regulation be and is hereby adopted.

SECTION 1. No person shall use any building as a stable for cows, unless it contains at least 1,000 cubic feet of space for each animal, is well lighted and ventilated, has tight roof and floors, good drainage, a supply of pure water, and all other necessary means for maintaining the health and good condition of the cows, and has been approved by the board of health.

SECT. 2. Every person using any such building shall keep the same and the premises connected therewith, and all land used for pasturage of the cows, clean and free from filth.

SECT. 3. Every person keeping a milch cow shall permit it to be examined from time to time as to its freedom from disease, by a veterinarian designated by the board of health.

SECT. 4. No person having an infectious disease, or having recently been in contact with any such person, shall milk cows or handle cans, measures, or other vessels used for milk intended for sale, or in any way take part or assist in handling milk intended for sale, until all danger of communicating such disease to other persons shall have passed.

SECT. 5. No person shall sell or use for human food the milk of a diseased cow, or permit such milk to be mixed with other milk, nor, until it has been boiled, shall sell or use such milk or any mixture of such milk for food of swine or other animals.

These regulations were printed in convenient form and sent to every person known to keep cows in the city. The summer was allowed for time in which to dispense with some of the poorest stables and make the necessary alterations in others to conform to the requirements. The changes which are being made in the condition of the stables will have a marked effect upon the healthfulness of the cows and the quality of the milk produced by them.

The examination of the cows by a veterinarian was delayed until November, when Dr. Burr was requested to make a thorough inspection.

PUBLIC BATHS.

The following table shows the number of bathers at the public baths:

For Men and Boys.	1891.	1892.
West Boston bridge, foot of Cambridge street	80,351	80,160
Craigie's bridge, foot of Leverett street	86,104	93,599
Charles-river bridge, near Causeway street	82,767	85,743
East Boston, Sectional Dock, Border street	54,473	54,180
Mt. Washington-avenue bridge, near Federal street	70,414	85,874
South Boston, foot of L street, Dorchester bay	207,048	256,502
Dover street, at South pier	94,825	79,601
East Boston, Maverick street	45,621	50,666
Chelsea bridge, Charlestown	43,945	43,797
Malden bridge	60,705	69,219
Commercial point	9,833	9,548
For Women and Girls.		
Charles-river bridge, near Causeway street	59,839	66,454
East Boston, Sectional Dock, Border street	34,412	34,367
South Boston, foot of M street	30,793	48,418
Dover street, at South pier	18,202	23,016
Commercial point, Dorchester	12,676	13,360
Chelsea bridge, Charlestown	16,701	24,292
Malden bridge, Charlestown	6,079	7,040
Total men and boys	836,086	908,889
Total women and girls	178,702	216,947
Total of both sexes	1,014,788	1,125,836

STABLE PERMITS.

The number of applications received at this office during the year for permits for the occupancy of stables was 354, and the number of permits granted 285. Nine of these applications were withdrawn before action was taken by the Board. Hearings were granted in 121 cases and 44 were refused.

UNDERTAKERS.

(Appointed annually.)

(Pub. Stat., 1890, Chap. 210, Sect. 1.)

Alexander, Alexis
Avdon, Michael
Badaracco, Andrew A.
Balfe, Thomas J.
Barry, M.
Barry, David
Baxter, Alonzo T.
Belgard, Philip
Bennison, Chas. E.
Bird, Ebenezer
Brady, Patrick J.
Brown, Edwin G.
Brown, Julia A. F.
Bryant, John
Bryant, John E.
Bryant, T. Weston
Burke, Edward
Burke, John B.
Burke, Edmund C.
Caro, Solomon M.
Cleary, J. P.
Cobb, Charles W.
Coburn, E. N.
Colbert, Charles E.
Cole, George S.
Cole, Harry H.
Cole, Jabez B.
Connell, Austin H.
Costello, W. P.
Crane, Horace R.
Crosby, Frederic J.
Dacey, C. M.
Dinnin, Charles A.
Dolan, James W.
Doolin, John
Doyle, Thomas
Eastman, Alman L.
Fallon, James P.
Fallon, John D.
Farrell, James
Farrell, Michael A.
Feeley, Thomas
Feeney, John
Field, George V.
Gleason, R.
Gleason, E. F.
Green, W. D.
Guggenheim, Joseph
Habelow, Louis
Haynes, James
Healy, Oliver F.
Heintz, John
Hill, George
Jacobs, Louis

Johnson, George
Jones, Lewis L.
Keating, John J.
Kelly, John A.
Kelly, Michael J.
Kennedy, P. T.
Lane, Thomas J.
Lavery, John W.
Levine, Michael
Lewis, Fred H.
Linnehan, C. P.
Lippa, William
Lobsenz, Nathan
Maloney, F. S.
Mann, Lewis A.
Marsh, W. W.
McCaffrey, John
McCaffrey, Christopher
McCartney, Timothy
Mitchell, M. J.
Morris, John
Mullen, James
Mullen, M. J.
Mullen, Patrick H.
Murphy, Michael J.
Murray, B. E.
Murray, E. A.
O'Donnell, James F.
Peak, John H.
Peak, John H., Jr.
Perry, Charles L.
Rafferty, Patrick H.
Reade, John
Regan, Martin
Riedel, Joseph
Roach, Edward E.
Roeder, John R.
Smith, Benjamin F.
Sprague, John W.
Sullivan, J.
Sullivan, Samuel J.
Sullivan, T.
Taylor, Hugh
Tinkham, Charles F.
Tinkham, Jeremiah
Waterman, Frank S.
Waterman, George H.
Waterman, Joseph S.
Willard, George A.
Williams, N. M.
Williamson, Joseph
Wittenberg, Solomon

CEMETERIES.

The cemeteries under the charge of the Board of Health, which are seventeen in number, have caused for their maintenance the past year an outlay of $4,936.35. This amount may be said to fairly represent the running expenses of these cemeteries, inasmuch as none of it was expended for any repairs or improvements which might be termed extraordinary. The condition of these cemetery grounds, tombs, headstones, etc., are quite satisfactory, with the exception of the Central ground, situated in Boston Common. To put this ground in proper condition will require the expenditure of a considerable sum of money, which the Board does not feel justified in taking from its regular appropriation; nor, on the other hand, does the Board advise any special appropriation for this purpose. It believes that this burial-ground should be closed against further interments in the interest of public health. Burials in this ground have increased the past year over the year next preceding. The year 1892 shows seventy-two interments, against sixty-five in 1891. What this Board advises at the present time concerning the Central ground, it also strongly urges in connection with the Granary and the King's Chapel grounds, situated on Tremont street.

The following table shows a list of interments for 1892 in the cemeteries in charge of this Board, together with those in the principal private cemeteries.

Following is a list of interments made during the year 1892 in the cemeteries:

Calvary	2,072
Mt. Hope	1,644
Forest Hills	898
Woodlawn	929
Mt. Auburn	581
Cedar Grove	474
*Bennington-st., E.B.	146
St. Augustine	59
*Phipps-st. Ground	64
*Central Ground	72
*Dorchester North	35
Union Ground	51
Mt. Benedict	991
*Evergreen	62
Bunker Hill, Roman Catholic	55
*Dorchester South	19
Ohabei Shalom	17
Codman	10
Gethsemane	18
Walk Hill	4
*Bunker Hill, Protestant	10
*Copp's Hill	2
*Granary Ground	2
*South Ground	2
Dorchester, Roman Catholic	375
*Westerly	1

NORTH GROVE-STREET MORGUE.

There were received at the North Grove-street morgue during the year the bodies of 110 persons deceased. Of these 19 were unidentified at the time of reception, and

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* In charge of the Board of Health.

of this number 12 were subsequently identified. There were made by the medical examiner and his associate 40 autopsies. The expenses of the morgue have been confined to sums paid for lighting, heating, and the necessary repair of instruments.

The morgue is in good condition aside from the deterioration due to its necessary use.

HAWKERS AND PEDLERS.

The number of hawkers and pedlers licensed was 1,160, and the number of persons licensed to collect grease was 153. They are all required to report once a month at the City Stable, in North Grove street, for inspection. In order to ensure their reporting, the licenses are granted for one month only, being renewed from month to month, as they report.

LYING-IN HOSPITALS.

During the year 302 confinements have taken place in the licensed hospitals, and one death has been reported.

These hospitals have been regularly visited and inspected by the Medical Inspector.

APPOINTMENTS.

On the first Monday in May the Board organized by the choice of Samuel H. Durgin, M.D., as chairman, and Charles E. Davis, jr., as secretary.

February 1st Dr. Francis A. Lane was appointed assistant port physician in place of Dr. Rufus E. Darrah resigned.

October 24th James McCarty was appointed as engineer at the disinfecting station on Swett street.

November 14th Arthur S. Ward was appointed stenographer and typewriter.

December 23d Henry P. Goode was appointed an inspector in place of Martin M. Lomasney resigned.

SAMUEL H. DURGIN,
GEORGE F. BABBITT,
EDWARD J. DONOVAN,
Board of Health.

FINANCIAL STATEMENT.

Expenses for Twelve Months, ending January 31, 1893.

Board of Health (salaries)	$8,916 67	
Clerk-hire	9,383 94	
Messenger	427 85	
Inspectors of nuisances	26,920 83	
Veterinary inspector at Abattoir	2,232 08	
City Physician and assistant, and Medical Inspector	5,700 00	
Maintenance of hospital	1,810 50	
Disinfection	20,733 88	
Abatement of nuisances	8,701 60	
Care of public urinals	5,101 07	
Care of burial-grounds	4,936 35	
Postage	786 00	
Telephone	370 10	
Travelling expenses of officers	1,279 81	
Office expenses	574 29	
Vaccination	419 54	
Horses and vehicles	1,390 57	
Stationery	346 65	
Printing	1,508 38	
Advertising	11 38	
		$101,551 49
Public baths:		
Labor	$13,921 52	
Other expenses	3,523 56	
		17,445 08
Evergreen Cemetery:		
Labor	$2,229 00	
Other expenses	609 87	
		2,838 87
Carried forward,		$121,835 44

Brought forward,		$121,835 44
Quarantine:		
Gallop's Island . . .	$4,611 91	
Steamer "Vigilant" . .	10,930 75	
Other expenses . . .	1,189 09	
Port Physician and assistant .	2,200 00	
		18,931 75
		$140,767 19

REPORT OF PHYSICIAN TO THE BOARD OF HEALTH.

BOSTON, February 1, 1893.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report for the year ending December 31, 1892:

There have been 3,909 persons vaccinated, and certificates of vaccination have been given to 2,967 children for their admission to the public schools. In the only instance during the year in which small-pox was found to exist, all persons in the immediate vicinity exposed to the disease were vaccinated.

A table is appended showing the number vaccinated from the year ending April 30, 1873, to the year ending December 31, 1892.

At the request of the Civil Service Commission, 255 men have been examined for appointment in the Police and in the Fire Departments. At the request of the Board of Police, twelve men have been examined for retirement. At the request of the Board of Fire Commissioners, twenty men have been examined for retirement, and nine cases of supposed injury or disease investigated.

The bodies of 557 persons dying without a physician in attendance have been examined. These cases comprise principally those who die of chronic diseases, where there has been no medical care for months previous to death, and those who die suddenly from natural causes. In these cases a careful external examination is made, the symptoms learned, and a diagnosis, sufficiently accurate for all practical purposes, reached. The law requires a medical certificate of death before a permit for burial is granted, and these examinations are made to conform to the law, as well as to collect statistics for bills of mortality. A tabular statement of the cases investigated is appended.

City Prison.

On Sundays visits have been made to this institution. The following diseases and injuries have been treated during the year: Contusions, 6 cases; delirium tremens, 22; eczema, 1; incised wound, 1; scalp wounds, 5; ulcer, 1.

Suffolk County Jail.

In this institution 936 patients have been treated during the year, requiring 2,080 visits. One suicide occurred during the year. Two deaths were caused by delirium tremens, and one death by valvular disease of the heart. There have been 36 cases of influenza, nearly all of which occurred in the month of January.

The increase in the number of cases of delirium tremens during the past four years has been very marked, 63 patients having been treated for this disease in 1889, 106 in 1890, 111 in 1891, and 127 in 1892. A tabular statement is appended.

City Temporary Home.

At this institution 218 visits have been made during the year. Twenty cases of confinement have been attended; 17 of the children were born alive. Seven deaths have occurred at the Home during the year. Fifteen patients were transferred to the City Hospital. The following diseases have been treated: Bronchitis, Bright's disease, cholera infantum, consumption, delirium tremens, gastro-enteritis, heart disease, influenza, marasmus, meningitis, ophthalmia neonatorum, pneumonia, rheumatism, scarlet fever, and tonsillitis.

Infectious Diseases.

Fifty-two cases of eruptive disease reported as small-pox have been examined. Of these one case was found to be small-pox, and the patient, a young woman who had been in the country only three days, was removed to the small-pox hospital on Canterbury street, where she recovered. The statement of the remaining fifty-one reported cases is as follows: Herpes zoster, 2 cases; syphilis, 3; measles, 3; scarlet fever, 2; urticaria, 3; tinea favosa, 1; irritation from the bite of the culex mosquito, 6; pustular dermatitis, 3; scabies, 3; purpura hæmorrhagica, 3; impetigo, 3; erythema multiforme, 2; varicella, 17.

Six cases of reported typhus fever have been examined, but in each instance the disease was found to be typhoid fever.

The names of 188 immigrants arriving in Boston from New York on typhus fever and cholera infected ships have been received from the State Board of Health, and an attempt has been made to discover the residences of these persons. In the majority of instances, these individuals could not be found. Whenever one of these immigrants was found, he was placed under careful medical supervision for a reasonable time.

An examination has been made of four reported cases of Asiatic cholera. In no instance, however, was the disease found to exist.

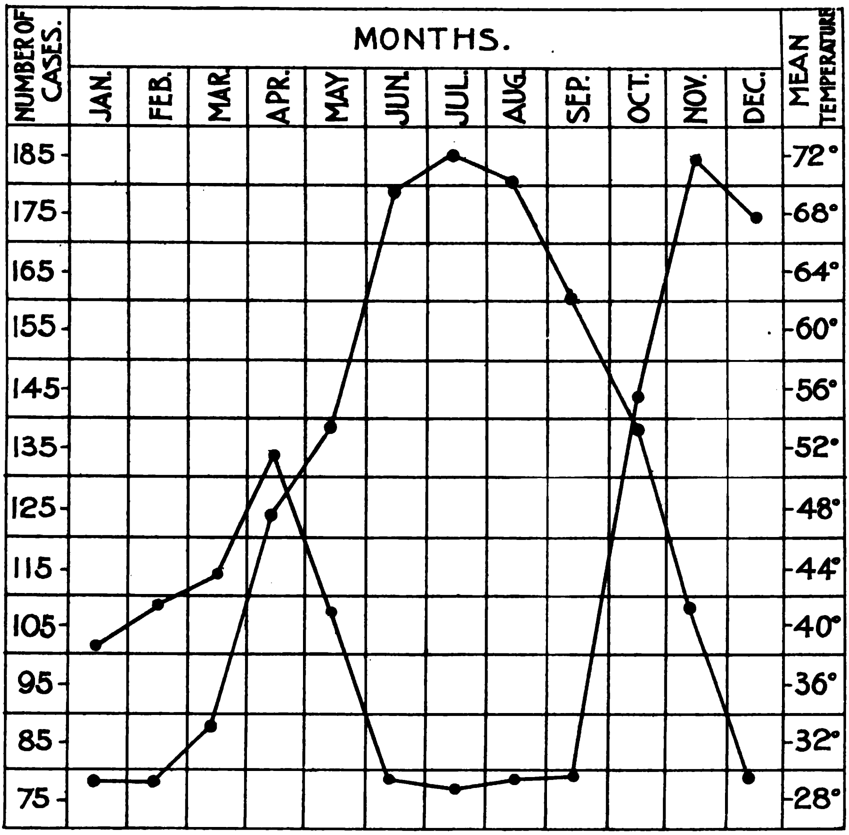
The reports of 1,353 cases of diphtheria have been investigated. It seems unnecessary to insist upon the importance of a medical inspection of schools, when it is evident from a study of Chart A, which indicates the number of reported cases of diphtheria, by months, for the year, that there is a marked diminution in vacation, and an increase in the prevalence of the disease during term time. Chart B indicates the ratio of cases of diphtheria to the thousand of population, by wards, for five years. In this chart the number of inhabitants to the acre in 1890 and 1892 is also shown, as well as the maximum and minimum elevation, in feet, above mean low water in each ward. It will be seen from a study of this chart, that in Wards 1, 9, and 10 there is a marked diminution in the ratios of cases for 1892, as compared with those of 1891. In Wards 2, 4, 13, 17, 18, 20, and 21 there is very little difference between the ratios for 1891, as compared with those of 1892. In Wards 3, 5, 6, 7, 8, 11, 12, 15, 16, 23, 25 the ratios were somewhat greater in 1892 than they were in 1891. In Wards 19 and 22 there is an increase of about two in the ratios of 1892, as compared with those of 1891. The most marked increase of the ratio in 1892 occurred in Ward 24. In no ward in 1892 was the disease as prevalent as it was in Ward 25, in 1888 and 1889. By following the broken line, which indicates the maximum and minimum number of feet above mean low water in each ward, it will be seen that there is no definite relation between the prevalence of the disease and low and marshy lands. For instance, in Ward 2, with a maximum grade of 64 feet, and a minimum grade of 16 feet, the disease was less prevalent than in Ward 1, which is more elevated. In 1888 and 1889 there seems, however, to be a certain relation between a low grade and the prevalence of the disease in Wards 6 and 7; but this relationship did not exist in 1890, 1891, and 1892. Map C indicates the ratio of cases of diphtheria to the thousand of population in each ward of the city for 1892. By reference to the color key, the relative frequency of the disease in the different wards can be ascertained. Two wards have ratios below one to the thousand; viz., Wards 9 and 10. Wards 1, 2, 3, 4, 5, 8, 11, 17, 18, and 21 have ratios above one and below two. The ratios of Wards 6, 7, 16, 22, and 25 are from two to three per thousand. The ratios in Wards 12, 15, 19, 20, and 23 are above three and below four. Wards 13, 14, and 24 have ratios of more than four to the thousand of population. The ratio of cases of diphtheria to the thousand of population in the whole city for 1892 was 2.70, as compared with 1.77 for 1891; an increase of .93 in the ratio.

Investigation of 2,938 cases of scarlet fever has been made. There can be no doubt that a careful medical supervision of the schools would accomplish much in preventing the spread of this disease. Chart D shows the number of cases of scarlet fever reported each month. The comparatively small number of cases in July and August, the slight increase in September, and the marked increase in October, November, and December are facts worthy of special notice as bearing on this subject. Chart E indicates the ratios of

CHART A.

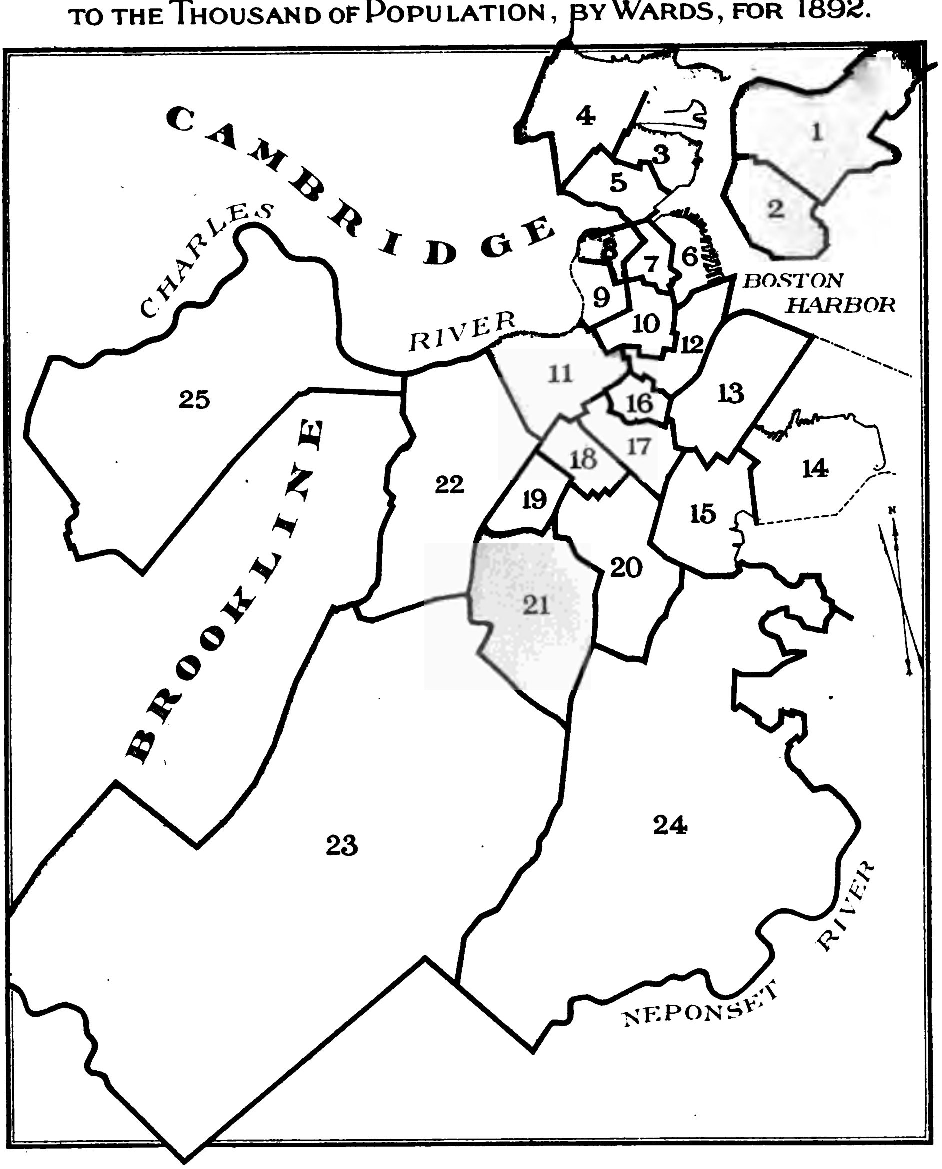
Cases of DIPHTHERIA, by Months, with the Mean Temperature for 1892.

Cases — ______ *Temp.* — ______



MAP C.

RATIO OF CASES OF DIPHTHERIA TO THE THOUSAND OF POPULATION, BY WARDS, FOR 1892.

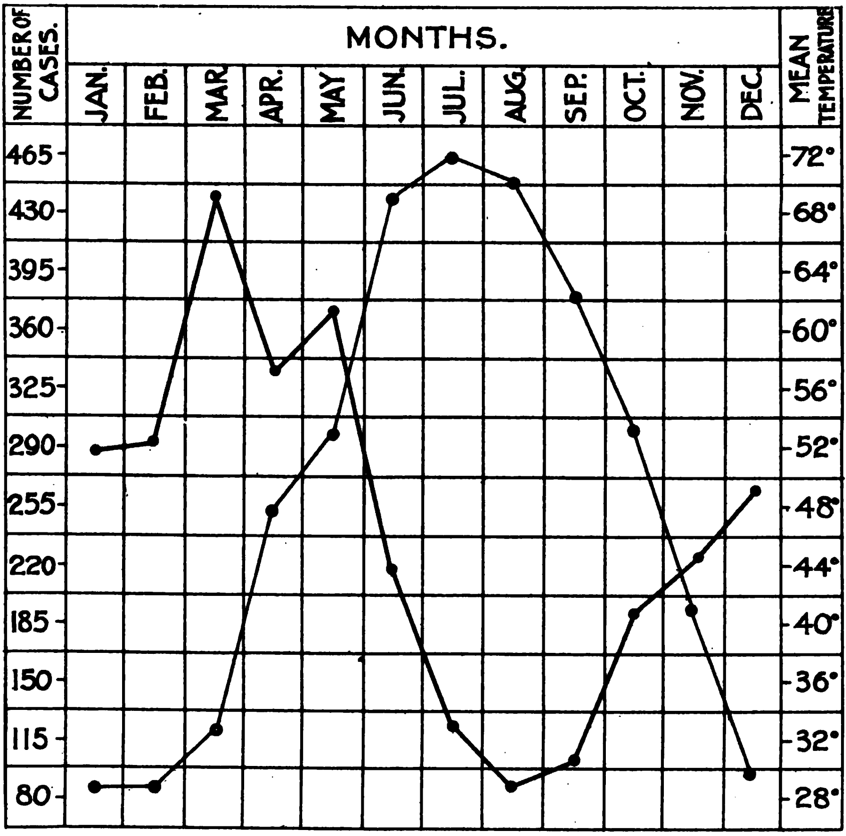


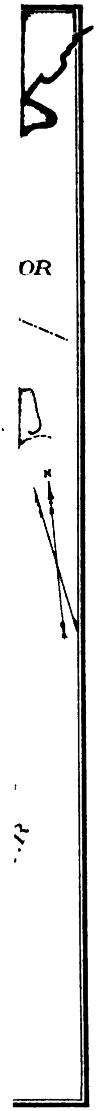
Ratio below 1 per 1000 = ▭
" 1 to 2 " 1000 = ▬
" 2 " 3 " 1000 = ▭
" 3 " 4 " 1000 = ▭
" over 4 " 1000 = ▭

CHART D.

Cases of SCARLET FEVER, by Months, with the Mean Temperature for 1892.

Cases = ——— *Temp.* = ———

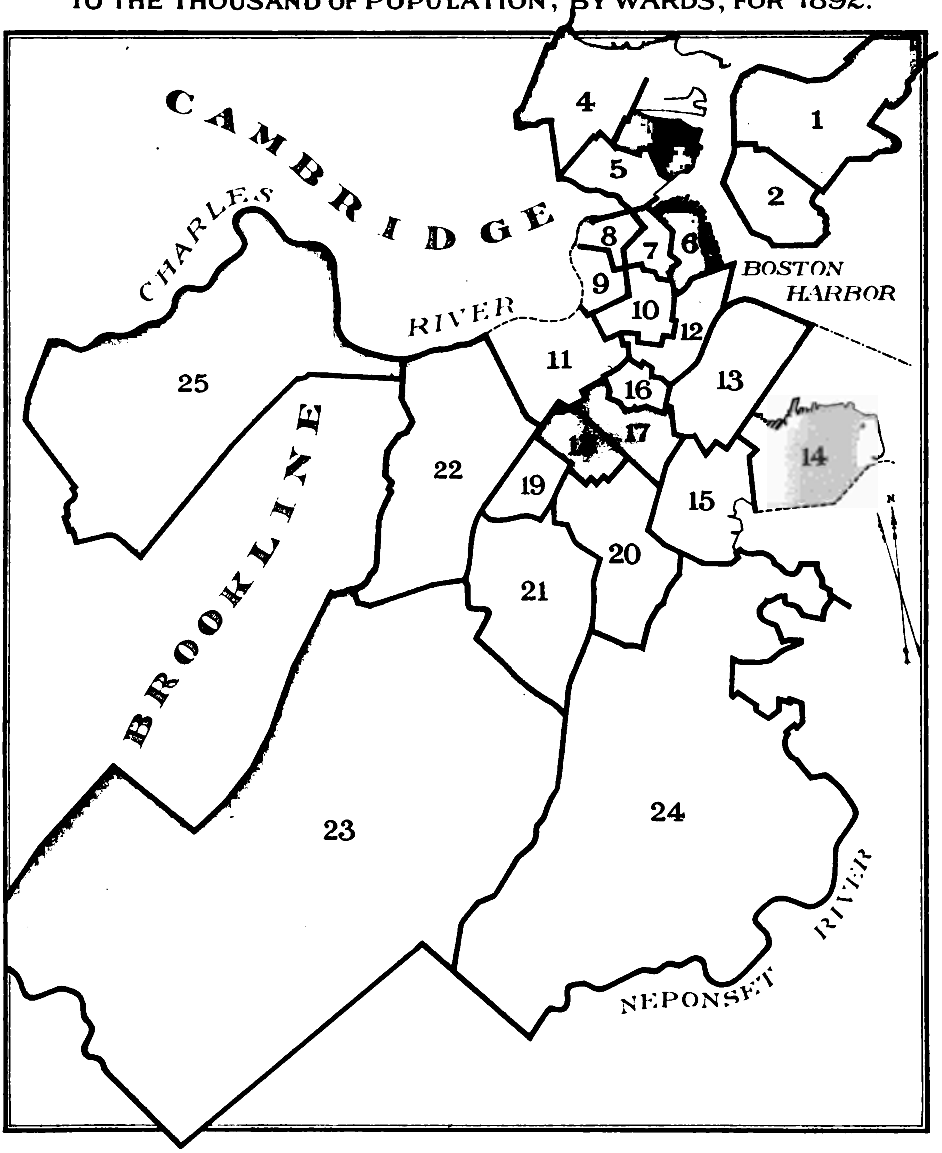




OR

MAP F.

RATIO OF CASES OF SCARLET FEVER TO THE THOUSAND OF POPULATION, BY WARDS, FOR 1892.



Ratio 2 " 3 per 1000 = ☐
" 3 " 4 " 1000 = ☐
" 4 " 5 " 1000 = ☐
" 5 " 6 " 1000 = ☐
" 6 " 7 " 1000 = ☐
" over 7 " 1000 = ☐

cases of scarlet fever to the thousand of population, by wards, for 1888, 1889, 1890, 1891, and 1892. The most marked increase in the ratios for 1892 as compared with those for 1891 were in Wards 1, 4, 7, 13, 15, 20, 24, and 25. In Wards 10, 11, 17, 18, 19, and 23 the difference between the ratios for 1891 and those for 1892 is comparatively slight. Map F indicates the ratio of cases of scarlet fever to the thousand of population, by wards, for 1892. Wards 10 and 11 have ratios from two to three per thousand. In Wards 3, 6, 17, 18 the ratios are above three and below four. Wards 5, 12, 16, 19, and 21 have ratios between four and five to the thousand of population. The ratios of Wards 8, 9, 14, 20, and 22 are from five to six per thousand. Three wards have ratios from 6 to 7, viz., Wards 2, 15, and 24; and in Wards 1, 4, 7, 13, 23, and 25 the ratios to the thousand of population are over seven. The ratio of cases of scarlet fever to the thousand of population in the whole city for 1892 was 5.87 as compared with 2.83 for 1891; an increase of 3.04 in the ratio.

The total number of reported cases of diphtheria and scarlet fever for 1892 was 4,291; an increase of 2,131 from the number reported in 1891. The ratio per thousand of these diseases for 1891 was 4.60; the ratio for 1892 was 8.58.

Dr. Morton Prince, assistant physician, and Dr. William G. Macdonald, medical inspector, have performed the duties of their respective departments with marked assiduity and fidelity.

Respectfully submitted,

JOHN H. MCCOLLOM,
Physician to the Board of Health.

Tabular Statement of Vaccinations at the Office of Physician to the Board of Health, from the Year ending April 30, 1873, to the Year ending December 31, 1892, inclusive.

YEAR.	Number of Vaccinations.	Remarks.
April 30, 1873	2,401	3,367 cases of small-pox.
" 30, 1874	485	32 " "
" 30, 1875	673	5 " "
" 30, 1876	931	3 " "
" 30, 1877	1,287	6 " "
" 30, 1878	2,078	9 " "
" 30, 1879	1,984	
" 30, 1880	2,497	1 case "
" 30, 1881	2,841	3 cases "
" 30, 1882	12,001	65 " "
" 30, 1883	1,412	5 " "
" 30, 1884	1,577	5 " "
December 31, 1885	6,904	6 " "
" 31, 1886	1,781	1 case "
" 31, 1887	2,044	4 cases "
" 31, 1888	3,677	8 " "
" 31, 1889	3,087	10 " "
" 31, 1890	3,323	1 case "
" 31, 1891	4,383	
" 31, 1892	3,909	1 case "

Tabular Statement of the Causes of Death investigated by Physician to the Board of Health for the Year ending December 31, 1892.

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
I. — Zymotics.													
Cholera infantum . .	. .	. .	. .	. .	. .	6	14	14	5	2	. .	. .	41
Cholera morbus . . .	. .	. .	. .	. .	. .	1	1	. .	. .	. .	. .	. .	2
Diphtheria	. .	. .	1	. .	. .	1	. .	. .	. .	2	1	. .	5
Dysentery	. .	. .	. .	. .	. .	. .	. .	1	1	. .	1	. .	3
Scarlatina	. .	. .	1	. .	. .	. .	1	. .	. .	. .	1	. .	3
Whooping-cough . .	. .	7	. .	. .	. .	1	1	. .	3	. .	. .	. .	12
II.—Constitutional.													
Cancer	. .	3	2	1	. .	2	3	1	1	1	1	2	17
Marasmus	4	. .	1	. .	3	3	1	8	7	2	1	. .	30
Phthisis pulmonalis .	6	5	1	7	9	6	7	9	5	6	8	4	73
Rheumatism	. .	. .	.	. .	. .	. .	2	. .	. .	. .	. .	. .	2
Tubercular meningitis	. .	. .	2	. .	. .	2	. .	. .	2	. .	. .	. .	6
III. — Local.													
Apoplexy	1	10	1	1	6	7	5	1	4	5	5	6	52
Bright's disease . . .	2	. .	1	2	1	. .	1	1	. .	1	. .	. .	9
Bronchitis	7	4	4	2	. .	1	1	. .	. .	. .	2	3	24
Heart disease	2	11	8	10	4	4	3	4	4	4	8	8	70
Meningitis	2	. .	1	1	2	2	. .	1	. .	. .	. .	2	11
Pneumonia	13	10	9	2	3	1	1	. .	. .	2	6	7	54
Other local diseases	. .	. .	1	1	1	. .	. .	. .	. .	. .	. .	1	4
IV. — Developmental.													
Cyanosis	1	. .	1	1	1	. .	1	2	1	. .	3	3	14
Inanition	4	3	3	5	4	2	2	3	3	6	5	5	45
Old age	. .	. .	1	. .	. .	1	2	1	2	. .	. .	. .	7
Premature birth . . .	1	3	. .	2	4	4	2	3	1	1	3	. .	24
Carried forward .	43	56	38	35	38	44	48	49	39	32	45	41	508

TABULAR STATEMENT OF THE CAUSES OF DEATH. — *Concluded.*

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Brought forward .	43	56	38	35	38	44	48	49	39	32	45	41	508
V. — Violent.													
Accidental	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1
Burns	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1
Fracture of skull . .	. .	. .	. .	. .	1	. .	. .	. .	. .	. .	. .	. .	1
Overlaid	. .	. .	. .	1	. .	. .	1	. .	. .	1	. .	. .	3
Suffocation by inhalation of vomitus . .	1	. .	. .	2	. .	. .	1	. .	. .	1	. .	. .	5
Suffocation by bedclothes	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	1
	44	56	38	38	39	44	50	49	39	34	45	44	520
Unknown	. .	1	. .	. .	. .	. .	. .	. .	. .	. .	2	. .	3
	44	57	38	38	39	44	50	49	39	34	47	44	523
Still-births	4	2	1	9	3	4	1	1	4	1	3	. .	33
	48	59	39	47	42	48	51	50	43	35	50	44	556
Referred to Medical Examiner	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	1	. .	1
Total	48	59	39	47	42	48	51	50	43	35	51	44	557

Tabular Statement of the Diseases treated at Suffolk County Jail, for the Year ending December 31, 1892.

DISEASES.	Remaining Jan. 1, 1892.	Treated during the year.	Recovered.	Improved.	Sent to Insane Asylum.	Discharged from custody.	Died.	Remaining Dec. 31, 1892.
General Diseases:								
Anæmia	..	1	..	1	..	..	..	..
Erysipelas	..	3	3	..	..	..	.	..
Febricula	..	12	12	..	..	..	..	..
Fever, intermittent	..	10	10	..	..	..	..	..
Fever, remittent	..	2	2	..	..	..	..	..
Influenza	..	36	36	..	..	..	..	..
Phthisis pulmonalis	..	8	..	4	..	3	..	1
Rheumatism, acute	1	6	7	..	..	..	..	..
Rheumatism, chronic	..	21	..	15	..	6	..	..
Functional Diseases of the Nervous System:								
Delirium tremens	3	124	125	..	..	..	2	..
Epilepsy	..	5	..	..	..	5	..	..
Neuralgia	..	14	2	7	..	4	..	1
Diseases of Intellect:								
General paralysis	1	..	..	..	..	1	..	..
Mania	..	1	..	..	1	..	..	..
Diseases of Heart:								
Valvular	..	3	..	..	..	2	1	..
Diseases of Bronchi:								
Bronchitis, acute	..	33	31	..	..	..	..	2
Bronchitis, chronic	..	1	..	1	..	..	..	..
Diseases of Lungs:								
Pneumonitis	..	2	2	..	..	..	..	..
Carried forward	5	282	230	28	1	21	3	4

STATEMENT OF THE DISEASES AT SUFFOLK COUNTY JAIL. — *Continued.*

DISEASES.	Remaining Jan. 1, 1892.	Treated during the year.	Recovered.	Improved.	Sent to Insane Asylum.	Discharged from custody.	Died.	Remaining Dec. 31, 1892.
Brought forward	5	282	230	28	1	21	3	4
Diseases of Fauces:								
Tonsillitis	1	11	12	. .	. .	. .	. .	. .
Diseases of Kidneys:								
Bright's disease	. .	1	. .	. .	. .	1	. .	. .
Diseases of the Digestive System:								
Colic	. .	5	5	. .	. .	. .	. .	. .
Constipation	. .	169	169	. .	. .	. .	. .	. .
Diarrhœa	. .	77	77	. .	. .	. .	. .	. .
Functional Diseases of Women:								
Dysmenorrhœa	. .	2	. .	2	. .	. .	. .	. .
Menorrhagia	. .	3	. .	1	. .	. .	. .	2
Pregnancy	. .	3	1	. .	. .	2	. .	. .
Diseases of the Cutaneous System:								
Acne	. .	6	. .	6	. .	. .	. .	. .
Eczema	. .	4	. .	4	. .	. .	. .	. .
Herpes zoster	. .	1	1	. .	. .	. .	. .	. .
Ichthyosis	. .	2	. .	. .	. .	2	. .	. .
Onychia	. .	3	3	. .	. .	. .	. .	. .
Phthiriasis	. .	13	13	. .	. .	. .	. .	. .
Psoriasis	. .	1	. .	1	. .	. .	. .	. .
Scabies	. .	5	4	. .	. .	1	. .	. .
Tinea favosa	. .	6	3	2	. .	. .	. .	1
Urticaria	. .	4	4	. .	. .	. .	. .	. .
Verruca	. .	3	3	. .	. .	. .	. .	. .
Diseases of the Eye:								
Conjunctivitis	1	4	. .	3	. .	2	. .	. .
Iritis	. .	2	. .	2	. .	. .	. .	. .
Carried forward	7	607	525	49	1	29	3	7

STATEMENT OF THE DISEASES AT SUFFOLK COUNTY JAIL. — *Concluded.*

DISEASES.	Remaining Jan. 1, 1892.	Treated during the year.	Recovered.	Improved.	Sent to Insane Asylum.	Discharged from custody.	Died.	Remaining Dec. 31, 1892.
Brought forward	7	607	525	49	1	29	3	7
Poisons:								
Opium habit	1	6	. .	. .	. .	6	. .	1
Surgical Diseases:								
Abscess	. .	23	23	. .	. .	. .	. .	. .
Gonorrhœa	3	30	14	. .	. .	17	. .	2
Hæmorrhoids	. .	3	. .	3	. .	. .	. .	. .
Otitis	. .	2	2	. .	. .	. .	. .	. .
Prostatitis	. .	4	. .	4	. .	. .	. .	. .
Stricture, urethral	1	. .	. .	. .	. .	1	. .	. .
Syphilis	2	13	. .	15	. .	. .	. .	. .
Varix	. .	5	. .	. .	. .	5	. .	. .
Injuries:								
Abrasions	. .	5	5	. .	. .	. .	. .	. .
Burns	. .	7	7	. .	. .	. .	. .	. .
Contusions	. .	26	26	. .	. .	. .	. .	. .
Fractures	. .	7	4	. .	. .	3	. .	. .
Sprains	. .	1	1	. .	. .	. .	. .	. .
Wounds, gunshot	. .	3	3	. .	. .	. .	. .	. .
Wounds, incised	. .	7	7	. .	. .	. .	. .	. .
Wounds, punctured	. .	5	4	. .	. .	. .	. .	1
Wounds, scalp	. .	38	35	. .	. .	3	. .	. .
Total	14	792	656	71	1	64	3	11
Malingering	. .	130	130	. .	. .	. .	. .	. .
Grand total	14	922	786	71	1	64	3	11

REPORT OF PORT PHYSICIAN.

Quarantine Station,
Boston Harbor, February 1, 1893.

To the Board of Health:

Gentlemen : I have the honor to submit the following report of the Quarantine Department for the year ending December 31, 1892 :

Quarantine regulations have been enforced for the entire year on all vessels bringing immigrants. From the first of June to the first of November all vessels arriving from the following ports were stopped at this quarantine station for inspection. From all ports in Europe; from the Western, Madeira, Canary, or Cape de Verde islands; from the Mediterranean sea or straits thereof; from the west coast of Africa, or around the Cape of Good Hope; from the West India, Bahama, or Bermuda islands; from any American port south of Virginia, including Central and South America. From September 7th to October 10th all vessels arriving at this port from any British American port with passengers on board were stopped for inspection. From November 2d all vessels arriving from any port in Europe, from the Mediterranean or straits thereof, or around the Cape of Good Hope, and from Central or South America, have been stopped at quarantine for inspection.

January 1st, on the arrival of the steamer "Roman," the ship's surgeon reported a death from variola on December 30, 1891. The case had been isolated from its commencement nine days before. All the passengers thereon were taken to Gallop's island and disinfected, also their clothing and luggage. The steerage and hospital quarters of the ship were thoroughly disinfected, and all persons on board were vaccinated who were not sufficiently protected. February 23d a case of measles was removed from the steamer "Peruvian." March 20th a case of measles was removed from the steamer "Michigan." April 16th a case of measles was removed from the steamer "Roman," and on April 17th a case of scarlet fever was removed from the steamer "Scythia." On April 20th a case was removed from the steamer "Norseman," for observation. It turned out to be a case of febricula. May 9th a boy sick with measles was removed from the steamer "Samaria," and with him several children who had been exposed to the disease. Two of these had measles. June 5th John Halpin, a steerage passenger on the steamer "Pavonia," was removed to Gallop's island, very sick with typhoid fever. He died June 20th. June 15th a child convalescing from measles was removed from the steamer "Ottoman." July 4th the steamer "Catalonia" arrived with seventeen cases of measles in various stages on board. All of these were removed to Gallop's island, and with them several other children who had been exposed to the disease. Only two cases developed among the latter. July 25th a boy was removed from the steamer "Prussian," suffering from a fever which was thought might be typhoid; he died August 4th of tubercular meningitis. July 27th a colored man was taken from the steamer "Roman" to Gallop's for refusing vaccination. He remained a week, when he escaped, but was retaken in Boston, and afterwards consented to be vaccinated. July 28th a sailor was removed from the schooner "L. B. Willey." He had a high fever at the time. It proved to be a case of malaria. September 20th the steamer "Marathon" anchored at quarantine with 890 steerage passengers on board prepared to undergo the twenty-day quarantine imposed by the President. During her stay eight cases of measles developed and were removed to Gallop's. September 30th she was relieved from further quarantine by the United States government and left this quarantine, but without first obtaining a permit from this department, for which she was ordered back to quarantine by the Board of Health. She complied with this order, and a case of measles was removed which was on board at the time she first left this station. She was then lawfully released. November 8th a child was taken from the steamship "Cephalonia" for observation, on account of the fever she had at the time of arrival. It proved not to be a contagious disease and she was discharged in a few days. December 28th a case of measles was removed from the steamer "Catalonia," which is in the hospital at the present time.

All vessels other than those that have been specially mentioned, that were boarded during the year, were free from contagious diseases.

In all cases where patients have been removed to Gallop's island, their bedding and clothing have been taken also, for disinfection by steam-heat under pressure, and the quarters where they have been isolated disinfected.

Early in the year we began to receive a number of immigrants from Russia; as, at the time, typhus fever was epidemic throughout a large section of that country, it was thought best to stop all Russians for the purpose of bathing them, and disinfecting their clothing and baggage. This regulation was put into effect February 20, on the arrival of the steamer "Norseman," with eleven Russians on board. Owing to the prevalence of Asiatic cholera in western Europe the rule was extended to all immigrants arriving at this port after September 1, and under it 3,930 persons have been removed, with nearly 10,000 pieces of baggage.

The steamers "Otranto," "De Ruyter," and "Sorrento," which arrived from Antwerp in the month of September, having sailed from there while cholera was prevalent, were detained at quarantine for a few days. The crews, with their clothing and bedding, were removed to Gallop's island for disinfection, and their quarters on board ship disinfected. The steamers "Wetherby," "Kilmore," and "Helvetia," which arrived from Hamburg, where cholera was epidemic, during the same month, were treated in the same manner, and, in addition, the cargoes were lightered and disinfected.

All disinfection on board ship is done by burning sulphur, 3 pounds to 1,000 cubic feet of air space, for a period of not less than six hours, and a solution of corrosive sublimate is used of the strength of 1 to 500.

The vessels boarded during the year were from the following ports:

West Indies	215	Java	5
Liverpool	144	Singapore	2
Coastwise	126	Iloilo	2
British Provinces	63	West Coast Africa	1
London	43	Calcutta	1
South America	38	Bermuda	1
Glasgow	24	England	1
Antwerp	20	Oregon	1
Hamburg	18	Passaroena	1
Hull	17	New Zealand	1
Mediterranean ports	10	Lisbon	1
Azores	7		
Nicaragua	6	Total number of vessels boarded	759
Mexico	6		
Manila	5		

Classified as follows:

Steamers	490
Schooners	173
Barks	56
Brigs	34
Ships	6
Total	759

Number of vessels disinfected 23

All of which were steamers.

Number of persons removed from vessels for sickness, 42

Number of persons vaccinated 2,779

The receipts of the department have been as follows:

Vessels of 500 tons and over 541, at $8	$4,328 00	
Vessels under 500 tons, 218, at $5	1,090 00	$5,418 00
Disinfecting 6 vessels, at $10 . .	$60 00	
Disinfecting 8 vessels, at $15 . .	120 00	
Disinfecting 7 vessels, at $25 . .	175 00	
Disinfecting 2 vessels, at $75 . .	150 00	505 00
Vaccinating 2,779 persons, at 25c. .		694 75
Disinfecting baggage and bathing persons of 3,930, at $1 . .		3,930 00
Cash on hand from last year . .		76 00
		$10,623 75

Turned in to City Collector . .	$10,547 75	
Cash on hand	76 00	$10,623 75

In addition to the above amount of cash, bills amounting to $1,640.18, for board and medical attendance of patients in the quarantine hospitals at Gallop's island, have been turned over to the City Collector for collection, from the owners of the different vessels in which the patients arrived. Formerly these bills were paid by the State. Under the present law, however, we cannot collect them from the State, but are enabled to collect from the vessels bringing the patients, if they are immigrants.

The income of this department for the year has been $12,187.93, nearly double that of any previous year. The increased expenses incurred on account of preparations taken to guard against the introduction of cholera have been much more than equalled by the increased revenue.

The number of persons inspected during the year was 70,750. Of this number 25,735 were seamen.

The following vessels ran by quarantine, and were either passed by the Board of Health, or compelled to return to the quarantine grounds: June 15, schooner "Hattie May," from Porto Rico; cargo, molasses. July 2, steamer "Joseph L. Colby," from Progreso; cargo, hemp. July 8, schooner "Burdenell," from Jamaica; cargo, logwood. August 9, schooner "Gertrude," from Grand Cayman; cargo logwood. September 5, schooner "Etta M. Barter," from Wilmington; cargo, lumber. September 17, schooner "Seraphim," from Bear River; cargo, wood. September 30, bark Mireilli, from St. Riene; cargo, cod-fish; and schooner "Utopia," from Liverpool, N.S.; cargo, lumber and codfish.

November 18, the steamer "Steinhoft," from Hamburg, was sent back to quarantine by the collector of the port. There was no sickness on board on her arrival, and there had been none during the voyage, nor had her passengers come from an infected district, but she had immigrants in the steerage, and so came under the President's proclamation. It was supposed she might have to stay here twenty days. She was detained about forty-eight hours.

Some much-needed improvements have been made at Gallop's island during the past year. Two buildings, each easily capable of holding 100 beds, have been erected on the level ground at the head of the wharf. These are intended for dormitories only, though, if the necessity should arise, they could be used as hospitals, or if at any time our hospital buildings were to become crowded, as they were last year, they would answer for the living-rooms of those persons who, while not sick, were undergoing a quarantine for observation. Alongside the wharf there has been built a bath-house, with twenty-eight bath-rooms, fitted with set-tubs and hot and cold water. In one end a room is fitted up for fumigating purposes. At the off-shore end of the bath-house, in a separate building, but so situated that a loaded car can be run directly from one to the other, there has been provided an iron cylinder 20 feet long by

6 feet 9 inches in diameter, fitted up for disinfecting by steam-heat under pressure.

At the time when the advent of cholera seemed most imminent, six buildings, formerly used by the city as polling-booths, were transferred to the island and erected, to be used as a temporary shelter for such immigrants, not sick, as might be removed from an infected vessel. Each booth will accommodate twenty persons.

Up to this year this department has always had to depend for its water supply upon wells on Gallop's island. Early last fall pipes were laid across from Long island to Gallop's island, and city water is now supplied to all the buildings on the island.

Following is a tabular view of the record of cases treated in the quarantine hospitals at Gallop's island during the year:

	Remaining in Hospital Jan. 1, 1892.	Treated during the year.	Discharged well.	Discharged improved.	Died.	Remaining in Hospital Jan. 1, 1893.
Malarial fever	.....	1	.....	1	.....	.....
Measles	14	50	49	.....	.....	1
Febricula	.....	1	1	.....	.....	.....
Scarlet fever	2	3	3	.....	.....	.....
Typhoid fever	.....	1	.....	.....	1	.....
Observation	6	7	7	.....	.....	.....
Tubercular meningitis	.....	1	.....	.....	1	.....
Total	22	64	60	1	2	1

There has been built for the quarantine steamer "Vigilant" this year a new propeller and a double smoke-stack; new legs and furnaces for the boiler are required, and should be put in as early as possible.

On February 1, Hyland H. Smith, who had served faithfully and efficiently as overseer of Gallop's island for twelve years, resigned to go into business. Edmund H. Witham was appointed to the position. On the same day Dr. Rufus E.

Darrah, who had been assistant physician at quarantine for a year, resigned, and Dr. Francis A. Lane was appointed to fill the vacancy.

This department is indebted to Mr. James R. Gerrish, Superintendent of the House of Industry, for many favors during the past year.

Respectfully submitted,
CHARLES H. COGSWELL, M.D.,
Physician at Quarantine.

REPORT OF INSPECTOR AT THE ABATTOIR.

To the Board of Health:

GENTLEMEN: I have the honor to submit the following report of the inspection of animals and dressed meat at the Brighton Abattoir for the year ending December 31, 1892:

ANIMALS KILLED.

Cattle	33,303
Calves	48,012
Sheep	462,533
Total	543,848

ANIMALS CONDEMNED.

	Number.	Weight.
Cows	38	11,321 lbs.
Oxen	3	2,500 lbs.
Steers	10	9,169 lbs.
Bulls	7	7,434 lbs.
Calves	16	720 lbs.
Sheep	6	250 lbs.
Parts of animals		4,045 lbs.
Total	80	34,469 lbs.

"Parts of animals," in the above table, refers to animals where only a part of the same was condemned, as a fore or hind quarter of an injured or bruised animal.

Diseases found among animals, after having been killed and dressed at the Abattoir:

Diseases.	Cattle.	Calves.	Sheep.
Tuberculosis	31	....	....
Anthrax	4	....	....
Actinomycosis	9	....	....
Septic peritonitis	2	1	....
Septicæmia	2	....	....
Enteritis	2	....	....
General œdema	1	....	....
Bruised	5	2	6
Greatly emaciated	1	....	....
Suppurating wounds	1	....	....
Immatured	....	13	....
Total	58	16	6

Animals received dead from the stock-yards to be dressed for food:

Animals.	Number received.	Number condemned.	Weight.
Cows	3	3	1,250 lbs.
Bulls	74	4	
Steers	54	6	
Total	131	13	1,250 lbs.

The above table refers to animals arriving at the different stock-yards that, from injury during transportation, or from what was supposed to be a slight and not dangerous illness, were unable to walk to the Abattoir; these are shot at the yards and carted to the Abattoir in the ambulance. The greater number of these represent injuries, fractures, bruises, and exhaustion from transportation and excessive heat. Of the number condemned all were found to be affected with a disease of a serious nature (septic diseases), the meat of which would be a most dangerous article of food.

Seventy-two animals have been sent at once to the dead-house, having arrived dead at the stock-yards. After removing the hides of such as are not dangerous to those who are obliged to handle them in the various steps prior to tanning, the carcasses are rendered and turned into fertilizer, as are also all of the animals condemned in the different slaughtering-houses.

INFECTIOUS WOUND DISEASES.

By this term is understood those diseases that are caused by the invasion of the system by septic organisms, as septic peritonitis, septicæmia, suppurating wounds, etc. The meat from such animals becomes a source of great danger, not only as an article of human food, but also to those who handle the same, especially where it is not practical to observe antiseptic rules. Of such diseases there were found in the different slaughtering-houses, in the process of dressing as marketable meat, six cases, all of which were condemned.

ACTINOMYCOSIS.

There have been found four hundred and forty-two animals affected with actinomyces, from very slight cases, where disease was confined to a localized tumor on the head, to advanced lung lesions. With the exception of nine cases all were confined to growths about the head or the immediate vicinity. The above nine cases showed lesions in the lungs, and, as would be expected in diseases where the greater portion of the lungs was destroyed, these animals were somewhat emaciated; all of them were condemned. Of the above four hundred and forty-two cases not one has been found where lesions existed in any important organ of the body other than the lungs, although all these animals had the usual lesions about the head or throat.

From observations made on the above cases, it seems that this disease spreads by continuity of surfaces, and not from the circulating of any part of the fungus through the body, by means of the blood and lymph channels.

Having an abscess about the throat, caused by the invasion of this organism, the actinomyces, through some abrasion in the mouth, it is readily seen how easy it might attack the lungs, were the abscess in the throat to break. The parts, as the tongues, cheeks, neck, etc., in the vicinity of the growth found in all the above four hundred and forty-two cases of actinomycosis were condemned, in addition to the nine cases, where the whole animal was condemned.

TUBERCULOSIS.

The following table shows the percentage of tuberculosis among cattle killed with the intention of being used for food:

Class of Animals.	Number received.	Tuberculosis.	Percentage.
Whole number of all kinds	33,808	52	0.15
Cows from Eastern States	1,843	50	2.71
Cows from Western States	....	....	....
Cows from Massachusetts	1,414	44	3.11
Steers from Western States	....	....	....
Oxen from Eastern States	....	2	....

Classification of those animals condemned for tuberculosis:

Class of Animals.	Number condemned.	Weight.
Cows, Eastern	33	7,797 lbs.
Oxen	2	1,550 "
Total	35	9,347 lbs.

Under the head of cows from "Eastern States" is understood those animals from all of the New England States, including Massachusetts.

In the above table a division is made of the animals from Eastern States, that were known to be from Massachusetts,

— that is, they were milked at least one season in Massachusetts, — of which there were 1,414, and among which there were found only 44 cases of tuberculosis, giving a percentage of 3.11.

From a comparison of the foregoing tables with those of last year it will be seen that the percentage of tuberculosis was lower during the past year; thus it seems that tuberculosis is decreasing rather than increasing in the State of Massachusetts, and that as far as the health of her animals is concerned, this State will compare favorably with any other State in the East.

INSPECTION OF CATTLE.

In April the Board of Health passed a regulation calling for an inspection of all the cow stables in the city, together with a medical examination of all the cows within the city limits. The medical examination of the cows was begun about the 1st of December, and has since been pushed steadily on.

There are within the city limits 2,348 cattle, distributed in 692 barns, which contain from 1 to 100 animals each.

The method pursued in the inspection of the cows has been to examine all the superficial lymphatic glands, mammary gland (udder), each quarter of which has been milked, and an auscultation of the lung on both sides, of each and every animal. On finding any suspicious animal where any question existed as to the condition of the lungs during the time the animal was quiet, after taking its temperature, it has been turned into the yard and put into active exercise, and again examined; if it still remained a suspicious animal, orders have been given to isolate, the use of milk stopped, and the State Cattle Commissioners made known of the fact; although the condemning of a suspicious animal rests entirely with the Cattle Commissioners, owners expressing a wish to at once kill such animals have been allowed to do so.

Of the 2,348 animals already mentioned, 8 have been pronounced suspicious; the Cattle Commissioners have been